PERIODICAL ROOM
GEN... LIBRARY
UNIV. OF MICH...
NOV 2 1929

THE AMERICAN School Board Journal

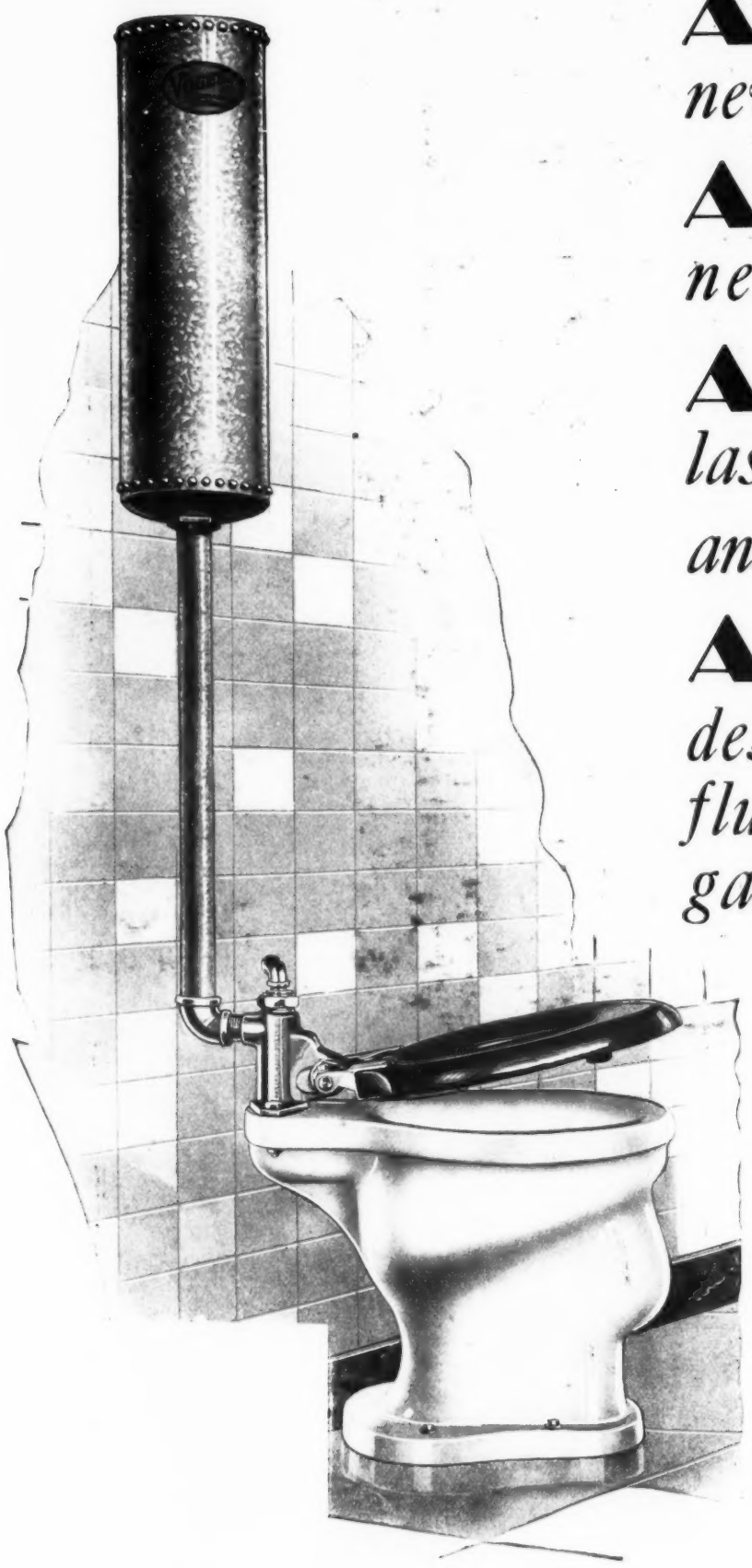
A PERIODICAL OF SCHOOL ADMINISTRATION

November, 1929

THE BRUCE PUBLISHING COMPANY
CHICAGO MILWAUKEE, WIS. NEW YORK

The Relation of the Board of Education to the Staff —*Willard S. Ford*

IT HAS THESE FEATURES-



A VALVE *that will never wear out . . . .*

A SEAT *that will never break . . . . .*

A TANK *that will last a lifetime . . . .*

and

A BOWL *especially designed to give a full flush on less than four gallons of water . . .*

This Selflush Number Ten Seat-Action Closet has behind it all the experience gained in making over a half million closets.

All plumbers install Vogel Selflush Closets. They can be supplied with open front seats—also seats of indestructible composition, and with juvenile height bowls.

Catalog and folders will be sent promptly upon request.

JOSEPH A. VOGEL CO.

WILMINGTON, DEL. ST. LOUIS, MO.

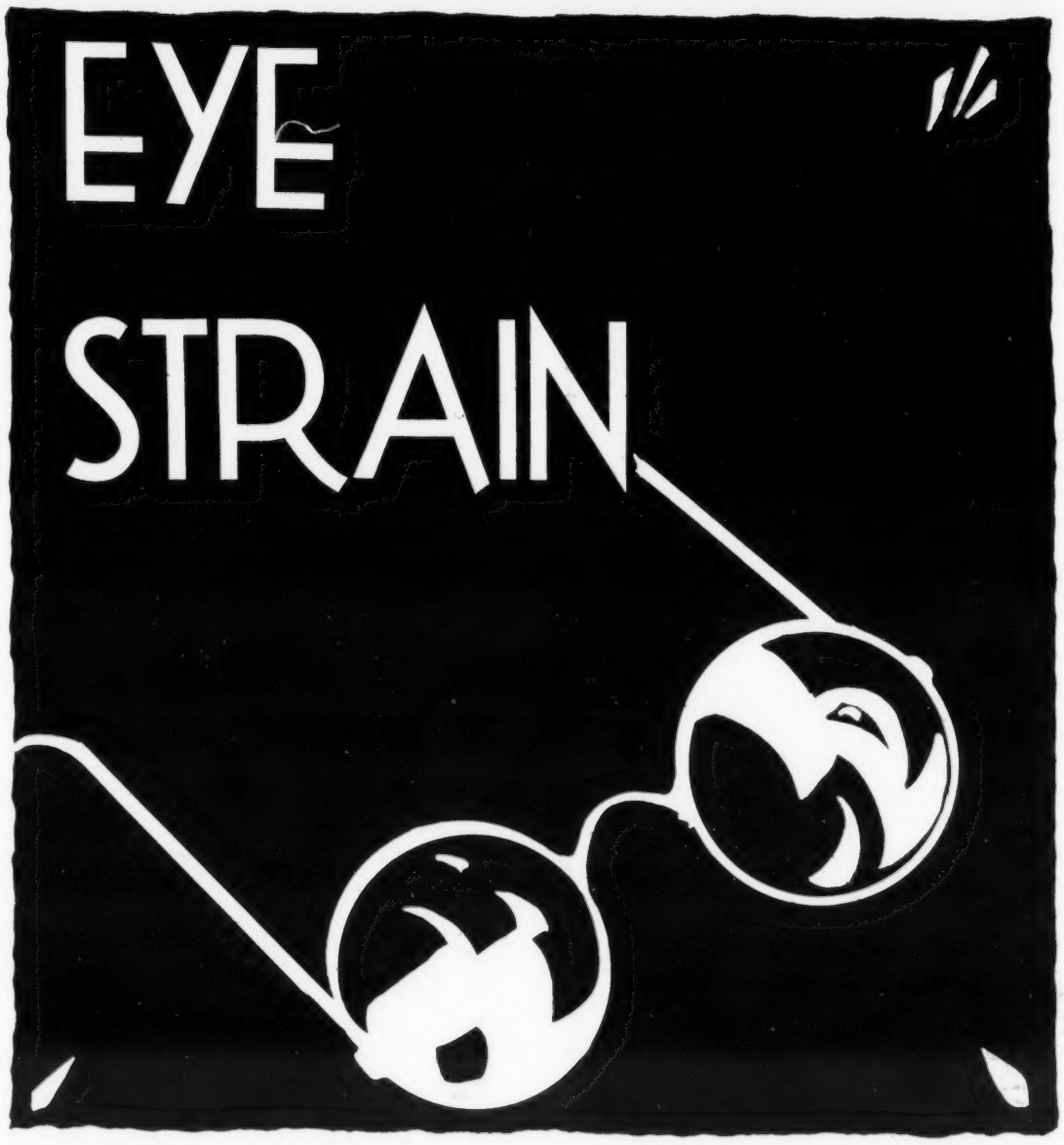
Tank can be concealed in the wall

87,000 TIMES and not even a washer renewed. The endurance test of the Vogel Selflush Number Ten continues.

the **VOGEL** PATENTED **SELFLUSH**

Number Ten... **ESPECIALLY DESIGNED FOR SCHOOLS AND INSTITUTIONS**

POOR BLACKBOARDS CAUSE



"CENTURIES OF SERVICE"
PYRAMID NATURAL SLATE BLACKBOARDS
Proof against Time - Wear - Water - Fire!

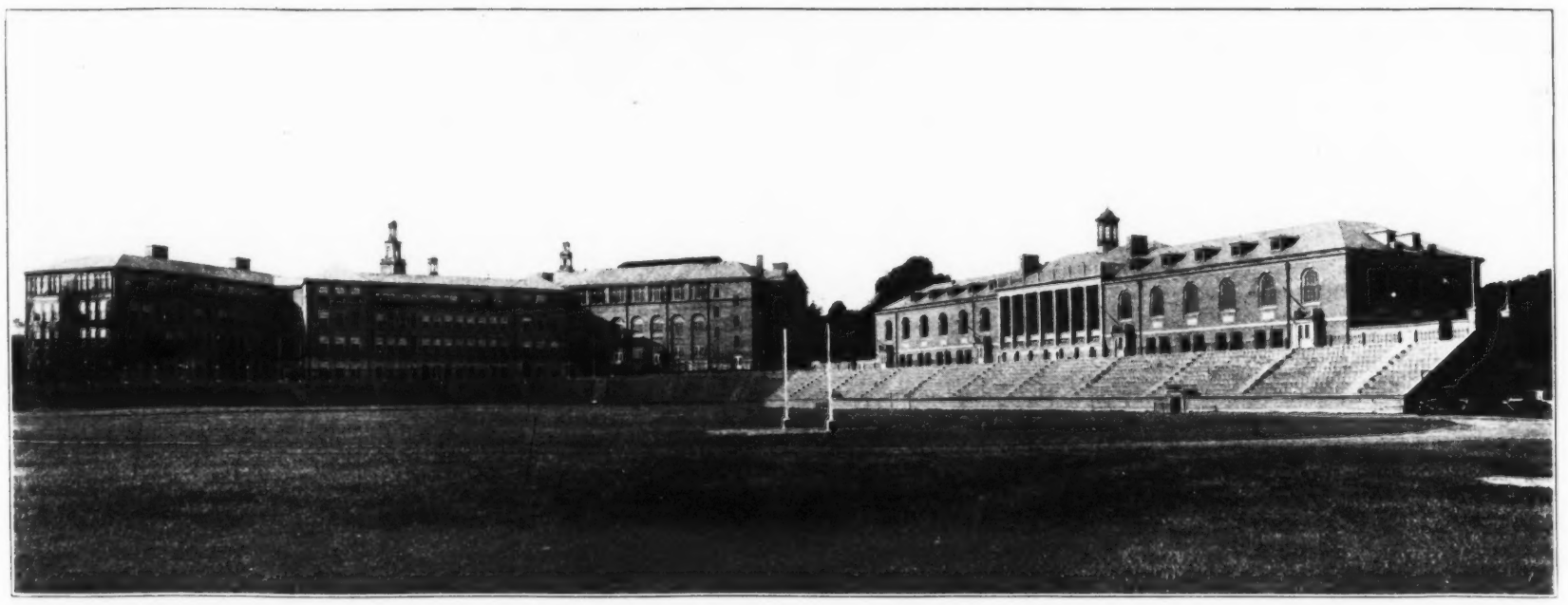
NATURAL SLATE BLACKBOARD CO.
1140 Robinson Avenue
PEN ARGYL, PA.

Efficiency depends upon good eyes . . . In later years students will thank you for the consideration shown in insisting that only natural slate blackboards go into the school building . . . A "Pyramid" natural slate blackboard can be easily read from any position in the room . . . The soft velvet finish will not reflect light and there is no glare to make reading a difficulty . . . That's the reason why every modern school building is equipped with these boards . . . Don't risk the eyes of student and teacher, but make sure every board is of slate . . . They are fireproof and wearproof . . . They will outlast the building . . . Write for samples of both the "Pyramid" board and its companion, the "Kencor" Cork Bulletin board . . . It will pay you.

PREVENT IT

A Message to Schoolmen . . .

If you are interested in janitorial MAN-POWER, send us the number and character of the rooms in your building. We will submit work schedules for each man. These schedules are based on the scientific principles of modern school maintenance, as approved by school authorities and known as "SCHOOL HOUSEKEEPING" by the Midland System.



WITHROW HIGH SCHOOL, Cincinnati, Ohio. Showing the modern grouping of buildings. The Athletic Field and Stadium in the foreground. Second largest High School Building in the United States.

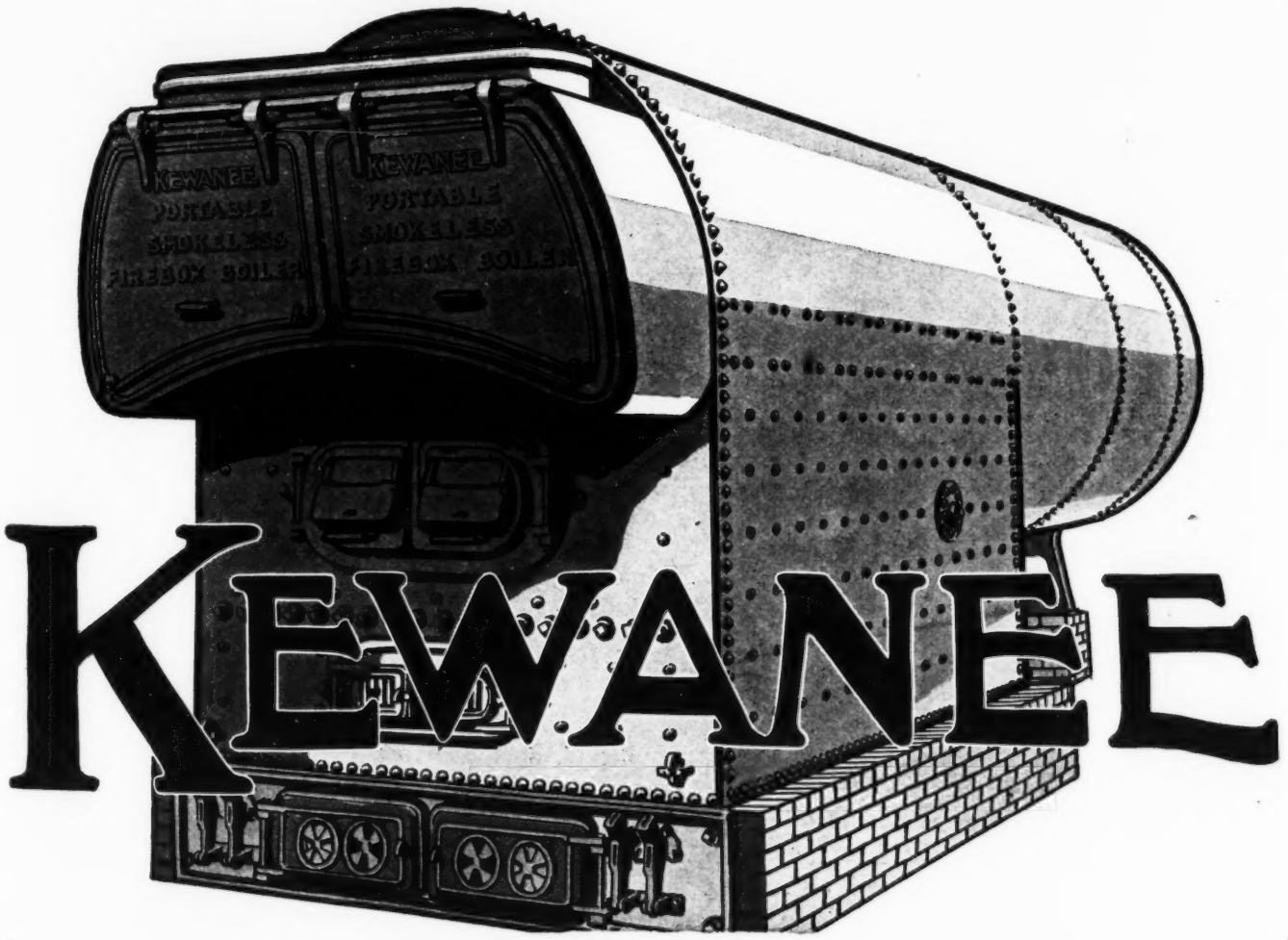
Every custodian of the beautiful new Withrow High School, Cincinnati has a definite working schedule based on standard tools and the most efficient materials. Every operation of school maintenance is charted—every step of the work is guided and directed.

For Tile, Marble and Terrazzo floors they use Midland TILEOLEUM, The Perfect Cleanser.

Economical of cost and labor. This is a modern problem being handled in a modern way. Write for complete information and text books. No charge or obligation whatever.

Midland Chemical Laboratories, Inc.

Dubuque, Iowa, U. S. A.



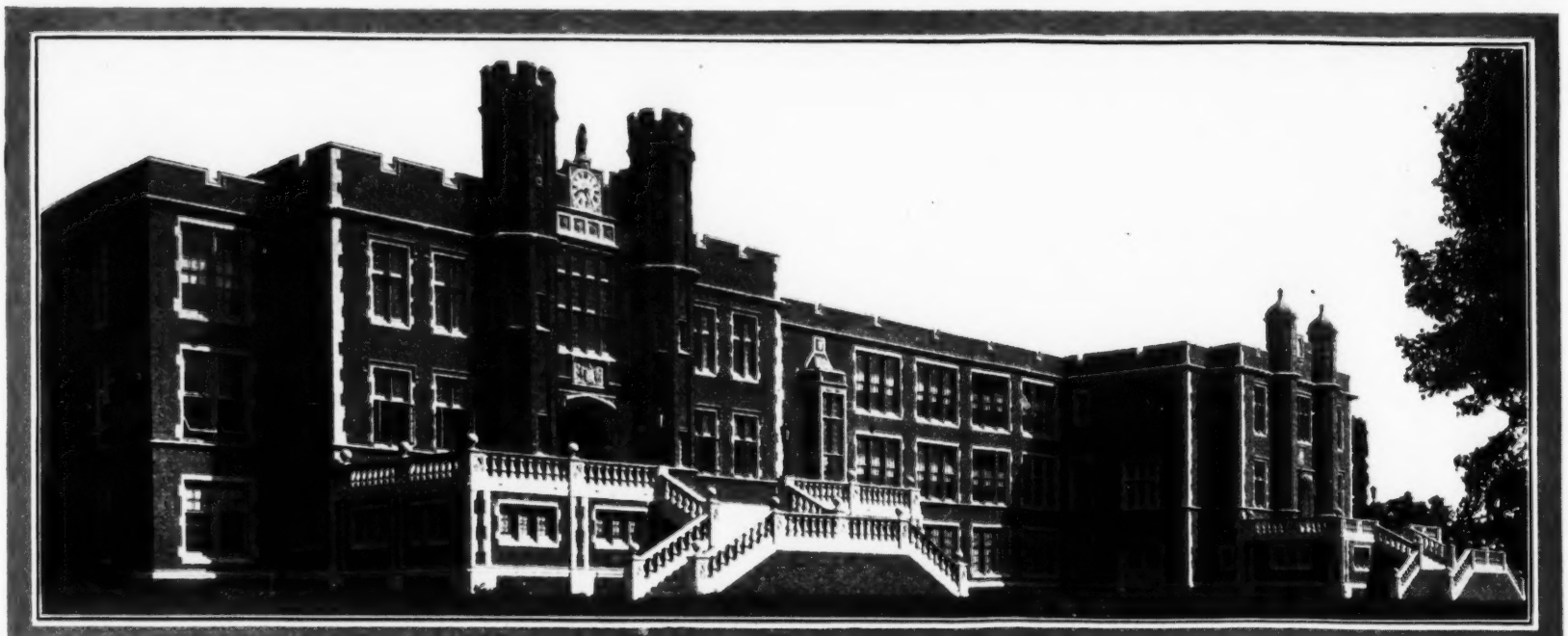
KEWANEE

61 Years *of* Boiler Building . . .

during all of which the trend has been definitely towards steel . . . have taught us that to give an owner the service he wants from a boiler, we must put certain things into it.

Kewanee has always built with that thought in mind. The result is that every Kewanee is of unquestioned value . . . a boiler that is a real asset in any building investment.

KEWANEE BOILER CORPORATION
division of
American Radiator and Standard Sanitary Corporation
Kewanee, Illinois
Branches in 40 Principal Cities



TEANECK HIGH SCHOOL, TEANECK, NEW JERSEY.
Equipped With JOHNSON HEAT & HUMIDITY CONTROL. Hacker & Hacker, Fort Lee, N. J., *Architects.*

JOHNSON HEAT & HUMIDITY CONTROL

STANDARD EQUIPMENT IN SCHOOL BUILDINGS TODAY

The ultimate object of all heating and ventilating systems is to create correct conditions in a building for the better health and comfort of the building's occupants. Production of heat and humidity and the diffusion of them are easily obtained. However, positively correct condition requires and depends upon control instruments, thermostats and humidostats of precise accuracy and efficient operation. Johnson Service Company is the originator of pneumatic thermostats and humidostats, and has been manufacturing and installing these control instruments for more than forty years. Johnson thermostats and humidostats apply to every form and plan and system of heating and ventilating apparatus with marvelously accurate results and satisfactory service, and are accepted today as standard: country-wide from "coast to coast," as again evidenced by the two expressive school building examples presented on this page. Write now for the book, "Johnson System Of Temperature And Humidity Control."

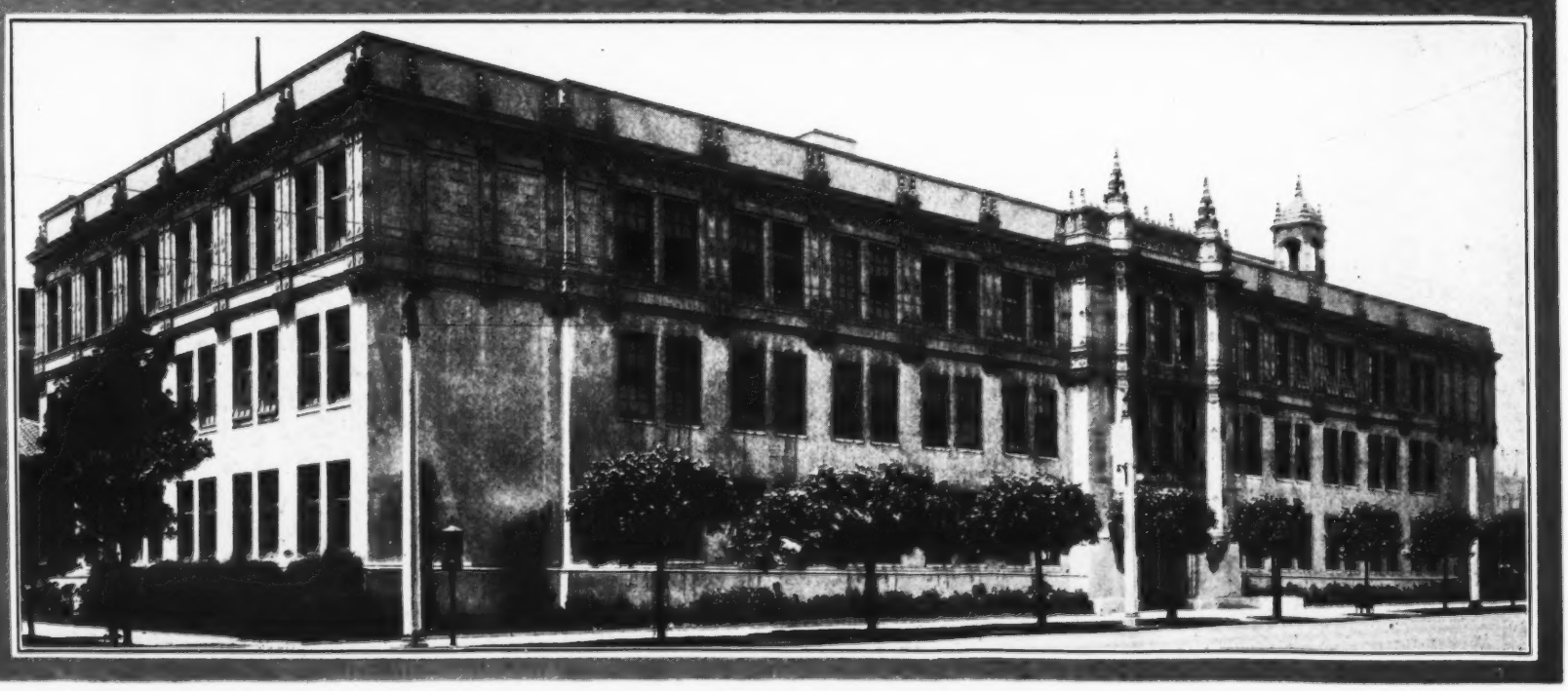
JOHNSON SERVICE COMPANY

Established 1885

MILWAUKEE, WISCONSIN

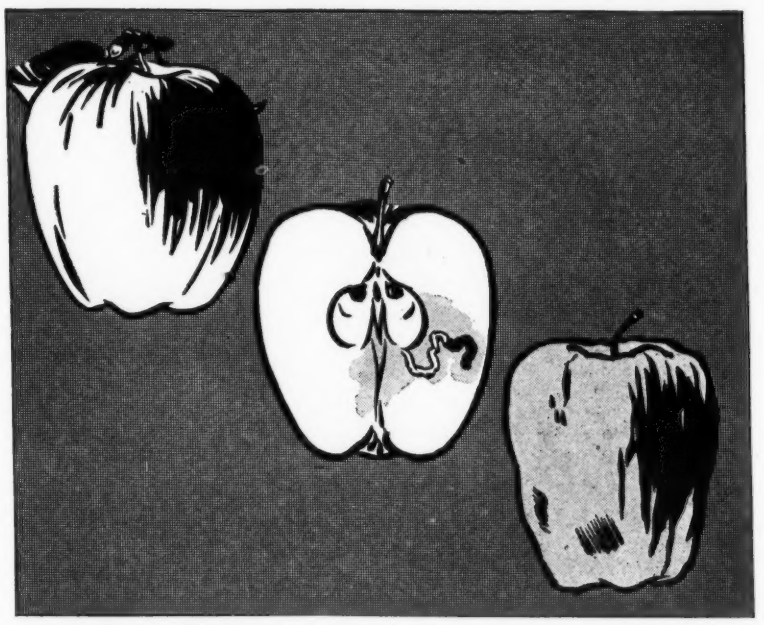
Branches In All Principal Cities

HIGH SCHOOL OF COMMERCE, SAN FRANCISCO.
Equipped With JOHNSON HEAT & HUMIDITY CONTROL. John Reid, Jr., *Architect.* Leland & Haley, *Engineers.*



The old fruit packers' rule that one bad apple may spoil a barrel is kept in mind in building Pacific Steel Boilers. Tell-tale staybolts are one precaution against any hidden weakness.

Never a hidden flaw



As a worm hidden in the heart of one apple may spoil not only that apple but an entire barrel, one hidden flaw can threaten an entire boiler. In full recognition of this fact, every detail of Pacific Steel Boilers is planned and built.

Take the tell-tale staybolt construction as an example. If you could look down into one of the water chambers that surround the four sides of the Pacific's fire box, you would see rows of bolts, like rows of corn in a field. They are of steel and overstrong, with ends welded into the plates.

Ordinarily enduring for years, under abnormal operating conditions one of these bolts may occasionally break. Then, if there is nothing to warn, an additional burden is shifted to those that remain, weakening them. If a sufficient number break, the wall plate sags or buckles, necessitating costly repairs.

In the Pacific, rather than being solid as in the ordinary boiler, each staybolt has a tell-tale hole drilled in each end. If a bolt parts, a warning jet of water spurts out, calling for a simple replacement that any repair man can make.

Thus, with the tell-tale staybolt construction used in locomotives, Pacific Steel Heating Boilers make assurance doubly sure of low repair costs and long service. There is a Pacific installation for your building. Write for full information.

PACIFIC

STEEL HEATING BOILERS

AND CAPITOL RADIATORS MAKE A LOGICAL COMBINATION

PACIFIC STEEL BOILER CORPORATION

Factories: Waukegan, Ill., Bristol, Pa.

Sales Offices in 58 Cities

Division of United States Radiator Corporation, Detroit

Von Duprin

Self-Releasing Fire and Panic Exit Latches

The equipment of old school buildings with Von Duprin latches is as vitally important for the safety of the inmates as is the equipment of new buildings.

Why the Square Deal for Hardware Dealers Is Important to You

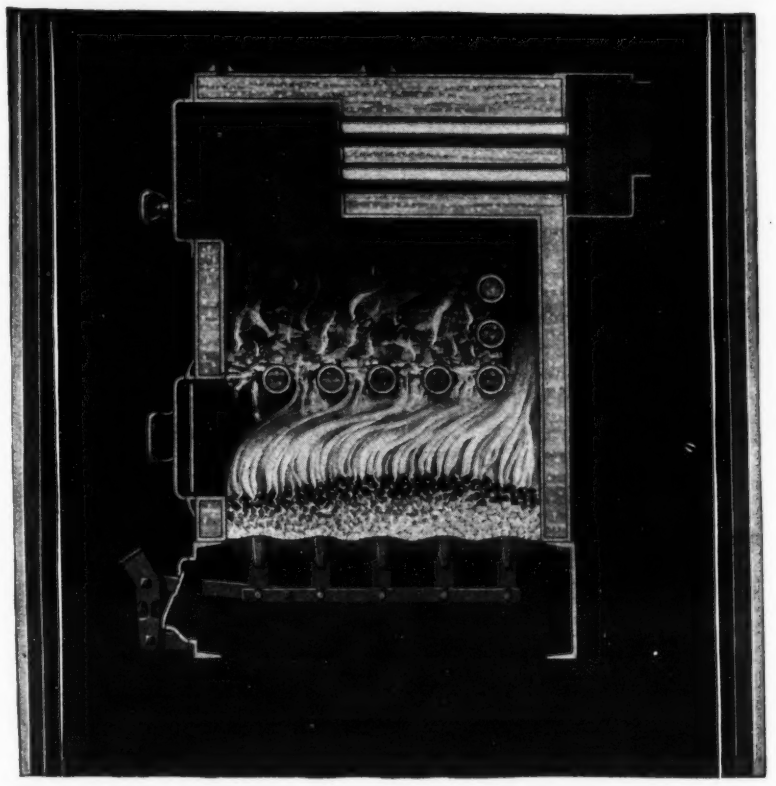
For twenty-one years we have made Von Duprin devices available to every reputable hardware dealer —and made the prices the same to all dealers. This has been done to foster fair and clean competition between bidders, and to prevent the occasional unscrupulous dealer from attempting to substitute inferior devices on the ground that he can not secure the genuine Von Duprin devices.

This is important to you because it gives you the certain knowledge that if your architect specifies Von Duprin devices by name, as a separate item of the specifications (apart from the finishing hardware), there is no legitimate reason for other devices being delivered to the job.

Your request will bring the Von Duprin catalog by return mail.

VONNEGUT HARDWARE CO.
Indianapolis, Ind.

Listed as Standard by Underwriters Laboratories



Cuts Cost of Water Heating 60%

Hot water costs drop when the Heggie-Simplex Water Heating Refuse Burner is installed. C. L. Anderson, prominent Chicago builder, says "Your burner saved 60% of the fuel as compared to the heater which it replaced."

The advanced heating-boiler style of design of the Heggie-Simplex Refuse Burner assures complete combustion of both fuel and trash and maximum utilization of usable heat units. Through a passage at the rear, the flames rise up and over the drying, burning refuse to an auxiliary chamber at the top where they thoroughly ignite all gases while still in the fire box.

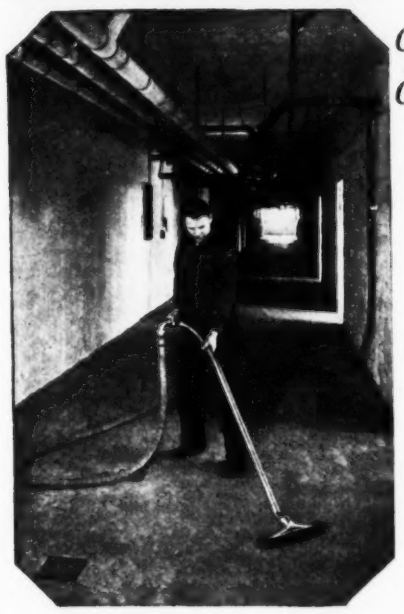
Instead of entering directly into the chimney, the gases pass through a set of flues which strip them of all usable heat units. The arrangement of these flues prevents burning papers, etc., from being carried into the chimney.

Let the economy and dependability of Heggie-Simplex electric-welded, steel Water Heating Refuse Burners reduce water heating costs in your building!

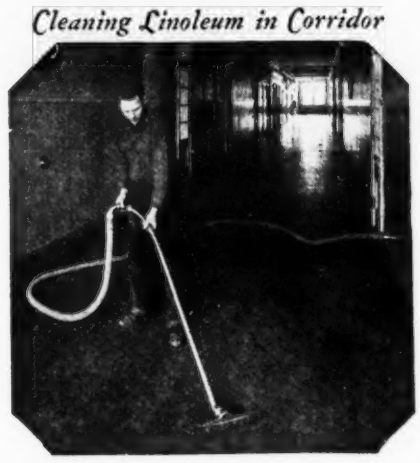
Heggie-Simplex Boiler Co., Joliet, Ill. Representatives in principal cities — telephone and address listed under "Heggie-Simplex Boilers."

HEGGIE-SIMPLEX

WATER HEATING REFUSE BURNERS



Cleaning Cement Corridor



Cleaning Linoleum in Corridor

Cleaning Stage in Auditorium

The cleaning system that saves three ways...

THE Spencer Central Cleaning System protects the health of every child and teacher in the school by removing to a container in the basement all dirt and dust —from the finest chalk dust to the heavy dirt in the corridors and mats.

It saves time—because it is an easy and convenient method. It saves equipment—floors—paint—books and decorations, by keeping the dirt constantly out of the building.

It saves in the boiler room—by cleaning the boiler tubes and floor—often the resulting economy pays the operating expenses of the system.

Leading educators and architects endorse it—and it is used daily in more than 1500 schools.

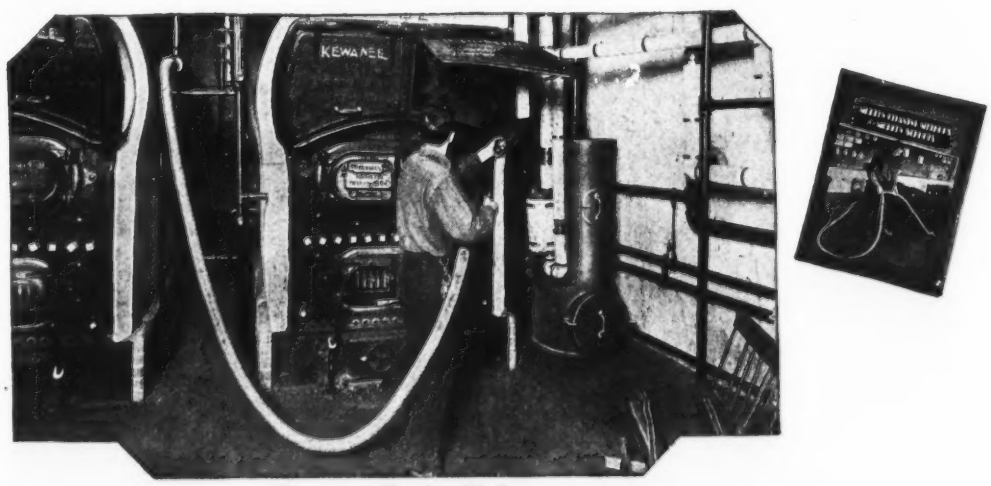
THE SPENCER TURBINE CO.

HARTFORD, CONNECTICUT — CENTRAL CLEANING SYSTEMS — REPRESENTATIVES IN 50 CITIES

3326

Send for Booklet

When you remodel—or consider plans for a new school—ask for the Spencer booklet "Modern Cleaning Methods for Modern Schools."



Cleaning Boiler Tubes

Our Contribution
to the art of Heating & Ventilation

SIX YEARS AGO when the Herman Nelson light weight, compact, indestructible radiator was placed on the market, it was immediately accepted as the greatest advance in the art of Heating and Ventilation in a generation. It has made possible heating and ventilation dependability and performance hitherto unattainable.

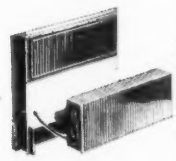
The Herman Nelson Wedge Core Radiator is an exclusive feature of all Herman Nelson Heating and Ventilating Products and accounts for their unequaled performance.

HEATING · VENTILATING · COOLING · DRYING · CONDENSING

UNIVENT

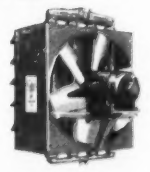
for the ventilation of schools, hospitals, offices and other buildings presenting an acute ventilating problem.

HERMAN NELSON *Invisible* RADIATOR



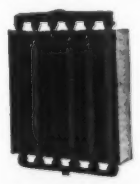
. . . supersedes all previous radiators, radiator cabinets or enclosures. Occupies no room space and makes possible any desired decorative scheme or furniture arrangement. Indestructible in service.

THE HERMAN NELSON hiJet HEATER



It operates at steam pressures from 1 to 150 lbs., and offers the better and more economical way of diffusing heat in Factories, Railroad Shops, Roundhouses, Mills, Warehouses, Garages, Gymnasiums and Industrial Buildings.

Herman Nelson Radiator Sections
for Blast Heating and Cooling



Indestructible, operating at any steam pressure from 1 to 150 lbs., non-corrosive and leak-proof.

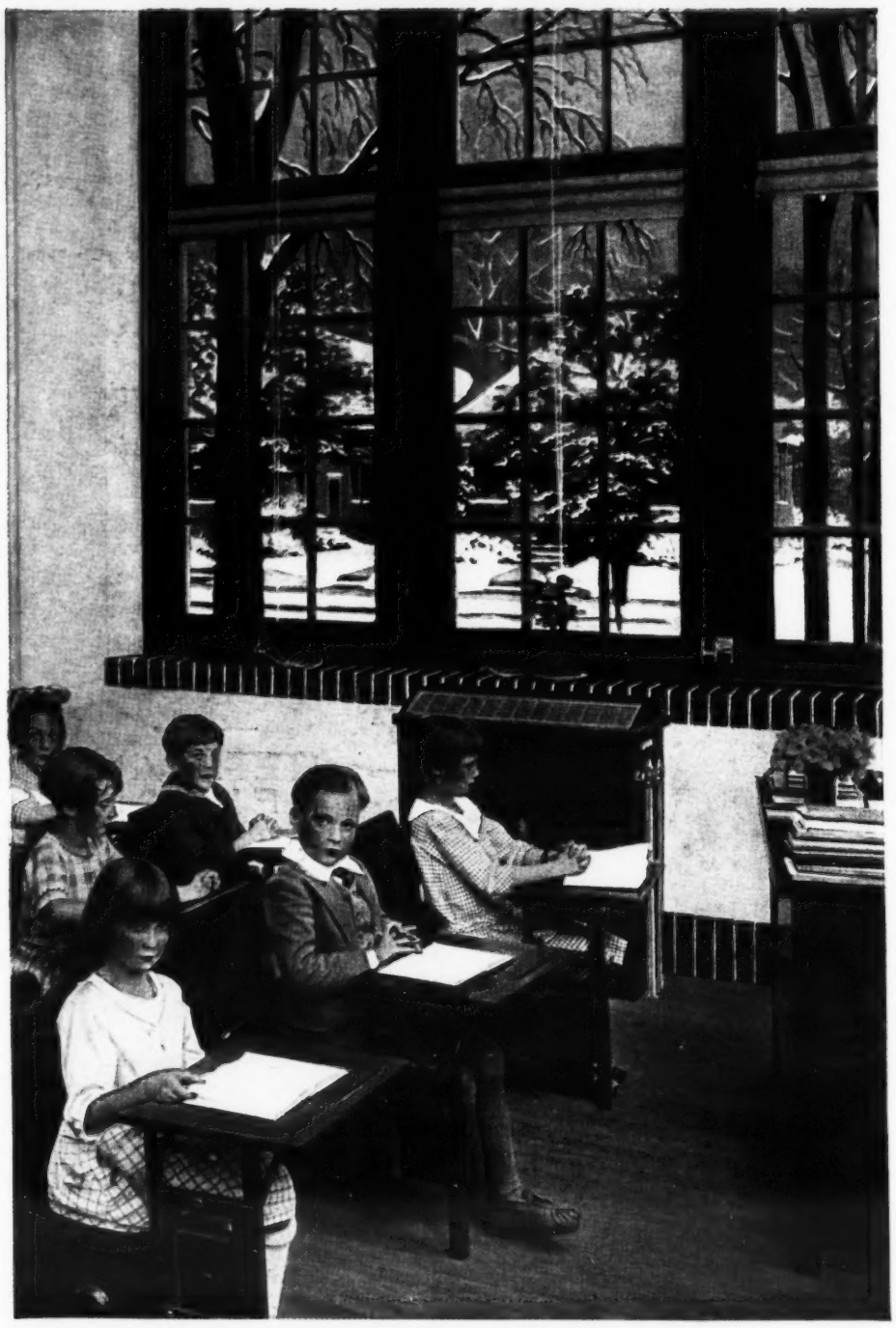
May be arranged in banks to solve any special problem of heating or cooling.

THE HERMAN NELSON CORPORATION · *Moline, Illinois*

Builders of Successful Heating and Ventilating Equipment for over 20 Years

Sales and Service

BELFAST, ME.	UTICA	SCRANTON	SAGINAW	CINCINNATI	DES MOINES	ST. LOUIS	DALLAS	SALT LAKE CITY	SAN FRANCISCO
BOSTON	BUFFALO	PITTSBURGH	DETROIT	TOLEDO	MILWAUKEE	BIRMINGHAM	OMAHA	SPOKANE	VANCOUVER
PROVIDENCE	PHILADELPHIA	CHARLOTTE, N. C.	CLEVELAND	INDIANAPOLIS	GREEN BAY	ATLANTA	EMPORIA	PORTLAND	TORONTO
NEW YORK CITY	WASHINGTON, D.C.	GRAND RAPIDS	COLUMBUS	CHICAGO	MINNEAPOLIS	MEMPHIS	KANSAS CITY	SEATTLE	WINNIPEG, MAN.
							DENVER		



Univent *and* Glass *make the difference*

Here is VENTILATION *that cannot be duplicated*

SUCCESSFUL results of the Univent have brought national recognition to the basic idea of unit ventilation. With success has come imitation; but—imitation is not duplication.

This fact is becoming more and more known: the results of Univent Ventilation *cannot* be duplicated by any other unit ventilator. The Univent's important features are exclusive to the Univent.

The Univent is a complete individual ventilating machine. Draws air directly from out of doors. Cleans it. Warms it to a comfortable temperature. Distributes it gently to every corner of the room—without draft. Simpler than opening windows and there is no question as to results—

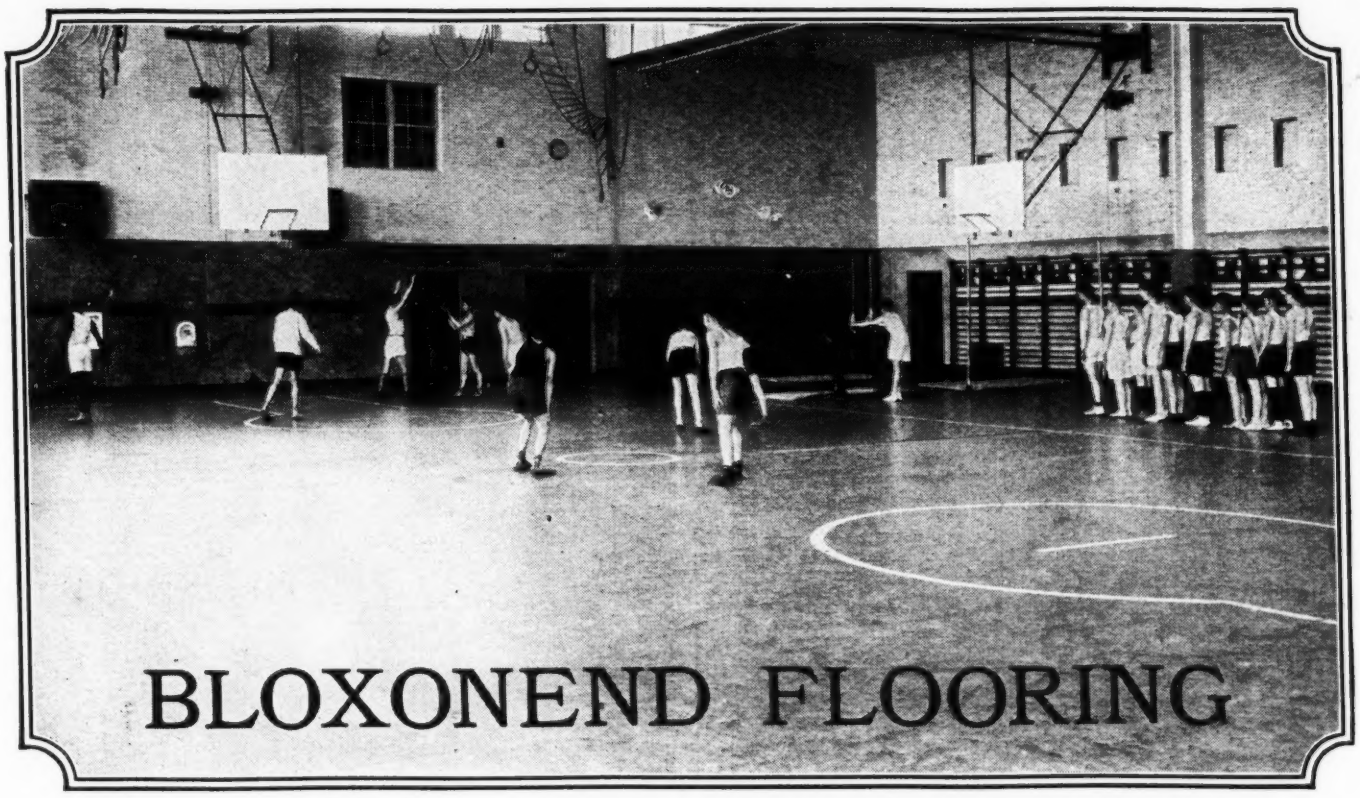
no other ventilator gives

because Univent results are obvious.

Better health and attendance records—better concentration of pupils—satisfied teachers—these are some of the results credited to the Univent by school authorities, architects and engineers everywhere who endorse it as the most simple, efficient and economical system of ventilation known. Write for free book of facts, No. 29. The Herman Nelson Corporation, Moline, Illinois.

UNIVENT (TRADE MARK)

VENTILATION



Harding High School, Bridgeport, Conn. Caldwell, Beckwith & Walker, and Wm. B. Ittner, Architects

Non-sliver — Non-slip

In shop service Bloxonend is laid directly over wood floated slab. In gymnasiums it is usually laid over 1x4 floor strips (for utmost resilience).

HERE is a flooring material that gives you every advantage of other wood floors with the added advantage of SAFETY. Bloxonend presents an *end-grain* instead of a *flat* or *edge grain* wearing surface. This construction absolutely eliminates the possibility of slivers and assures a non-slip surface.

Bloxonend is a handsome floor. It is fast, resilient and comfortable under foot. It lasts a life time and stays smooth. Nearly all prominent school architects specify Bloxonend for the gymnasiums and shops of finer type buildings. If it is not included in the specifications for your new school, write for free descriptive booklet and sample. Also send us the name of your architect.

CARTER BLOXONEND FLOORING COMPANY

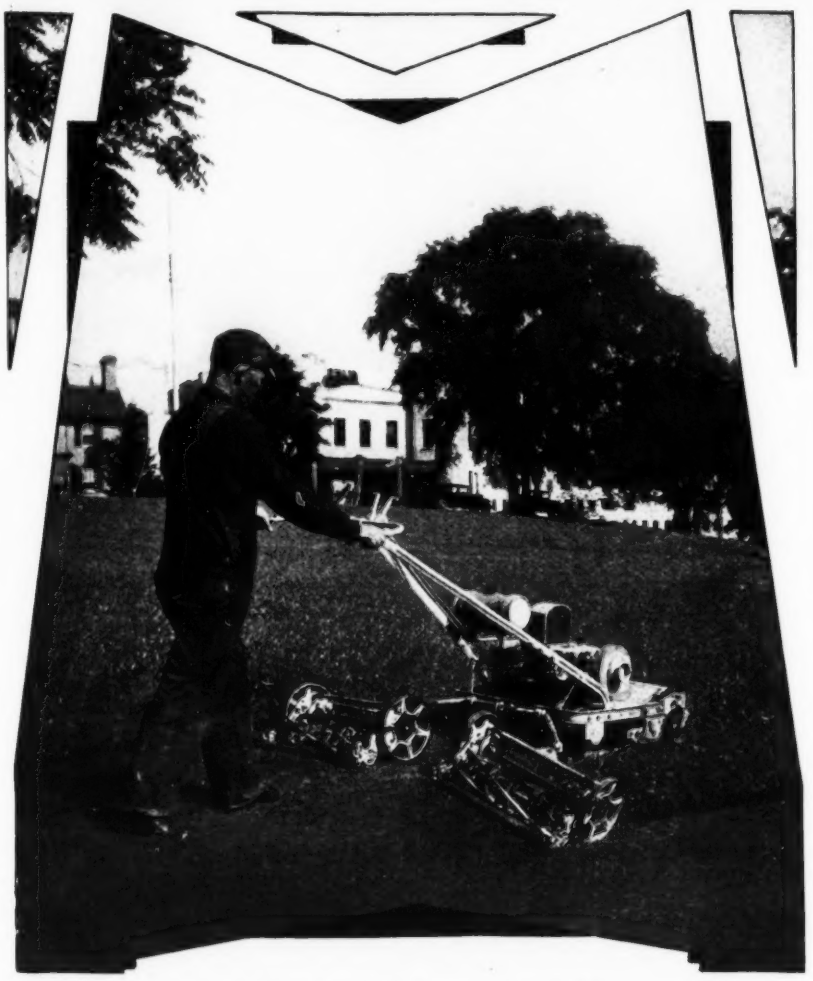
Kansas City, Missouri

Representatives in Leading Cities

BLOX-ON-END FLOORING

Bloxonend is made of Southern Pine with the tough end grain up. It comes in 8 ft. lengths with the blocks dovetailed endwise onto baseboards

Lays Smooth
Stays Smooth



Machine shown in picture above is the Coldwell "L-Twin." Mows and rolls 4 to 6 acres a day. Gang units increase its cutting capacity to 10 acres a day . . . on one gallon of gasoline.

Supremely adapted for your requirements

LONG, dependable, repair-free service, under every condition of usage, makes the Coldwell Motor Lawn Mower and Roller the ideal machine for schools and colleges. Equipped with full-width drive roller. May be used for combined mowing and rolling or for separate rolling only.

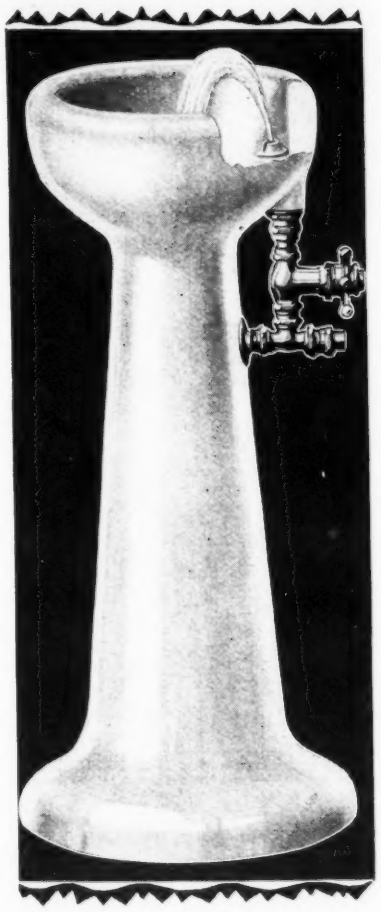
At our expense, and without obligation, you are invited to put Coldwell Power Lawn Mowers to the test on your own grounds and make them prove themselves. Literature on request.

HAND — HORSE — SINCE 1867 — GASOLINE — ELECTRIC

COLDWELL

DEPENDABLE LAWN MOWERS

COLDWELL LAWN MOWER COMPANY, NEWBURGH, N.Y., U.S.A.



Satisfy Thirst Sanitarily

WHEREVER Rundle-Spence drinking fountains are installed, the thirst of all is satisfied sanitarily. It's bound to be because lips cannot touch the R-S nozzle—the slight slant stream prevents water from falling back upon the jet.

Let us give you complete information covering R-S Sanitary Drinking fountains, also bulletins covering our line of Bath and Plumbing Fixtures and Supplies.

⚜ ⚜ ⚜

Rundle-Spence Mfg. Co.

51 - Fourth Street
MILWAUKEE, WIS.

RUNDLE-SPENCE

"The Finest Encyclopaedia in English," *says the New York Sun*

"Its Equal Does Not Exist," *says the New York Times*

Every Library should have this new 14th Edition of the

Encyclopaedia Britannica

in the Special Library Form

The magnificent 14th Edition of the Encyclopaedia Britannica has only just come from the presses. Yet it has already met with overwhelming, enthusiastic applause from the public, from critics, and from prominent librarians. Everywhere interest in this newest, greatest knowledge book is at the peak, and demand for sets is constantly growing.

. . .

Preparation of this "humanized" Britannica called for nearly three years of intensive editorial effort—the expenditure of over $2,000,000. It is written by more than 3500 leading authorities from 50 countries. Every resource of modern illustration gives the 15,000 color plates, halftones, drawings and maps a beauty and accuracy never before achieved. In every respect, this new 14th Edition is worthy of the Britannica tradition!

Of special interest to librarians is the Special Library Form printed on rag paper and designed to meet in every way the exacting requirements of library use. The volumes are plainly stamped for quick identification, and durably bound in high quality red buckram. Yet, thanks to the economies of large production, it is possible to offer these 24 volumes at an exceptionally low price.

. . .

Entering your order now will assure you a set or sets of this special form. The books are now being shipped in the order of purchase, and although we cannot guarantee how long this first printing in the Library Form will be available at the present price, prompt action should assure you of early delivery.

Upon request, we shall promptly send you descriptive literature regarding the **new** Britannica, including comments by prominent persons in the librarian field.

Encyclopaedia Britannica, Inc.

342 Madison Ave., New York, N. Y.

These Schools Re-order Cemcoat Floor Enamel Every Year

The Rockaway, New Jersey, Borough Public Schools writes, "We have used Cemcoat Floor Enamel for about five years and find it satisfactory in every way. *You are certain to get a re-order at the close of each year for summer-time painting.*"

Cemcoat is one of the seven products described below that reduce school upkeep expense.

FOR CONCRETE FLOORS

Hardening and Dustproofing

LAPIDOLITH—This liquid chemical concrete hardener welds the loose particles into a close-grained mass that becomes granite hard. Excellent for basement or any floor receiving hardest wear. The flint-like topping withstands years of traffic. Water or chemicals do not readily penetrate it. Merely mopping and sweeping keeps a Lapidolized concrete floor sanitary. Goes on like water so labor cost is negligible. Equally efficient for old or new floors. Colorless.

Surface Coating and Coloring

CEMENT FILLER—For floors where decorative appearance is wanted as for hallways, basement rooms, toilets, etc., apply this material over new or old surfaces. Forms a wear-resisting smooth, colored top over rough, pitted or soiled floors. Four standard colors. Easy to apply. Labor cost small.

Painting

CEMCOAT FLOOR ENAMEL—Dustproofs and decorates with a glossy, washable, wear-resisting film. Comes in eight attractive colors. Exceptionally elastic. Will stand up where other floor enamels would fail. Dries in twenty-four hours. Special application for basements on floors where dampness is prevalent.

FOR WOOD FLOORS

Wearproofing and Dustproofing

LIGNOPHOL—This penetrating preservative prevents splintering, checking, warping and rotting by filling interior wood cells and fibres with oils and gums. Supplies a toughening binder that increases tensile and resisting power of wood. Safeguards floors against deterioration from dry heat and moisture. and waterproofs.

Polishing

AMALIE Liquid or Paste WAX—Where a more lustrous finish is desired, apply this highly decorative Carnauba Wax. Has high content of Carnauba which is the reason for its long wear. Use liquid for renewing polish on floors previously waxed. Use paste on new or newly treated floors.

For Walls and Ceilings

CEMCOAT—For hallways and auditoriums — wherever light is needed use Cemcoat Egg Shell or Gloss—the strongest light-reflecting white paint that is made. Not only does Cemcoat reflect more light, but it stays white after other paints turn yellow. Won't chip or peel. Can be washed over endlessly. Comes also in colors.

SONOTINT—Specially made for classrooms or the library. Its soft, velvety finish reflects light without glare. Comes in 18 beautiful tints that are restful to the eyes. Contains no poisonous ingredients. Washable.

L. SONNEBORN SONS, Inc.

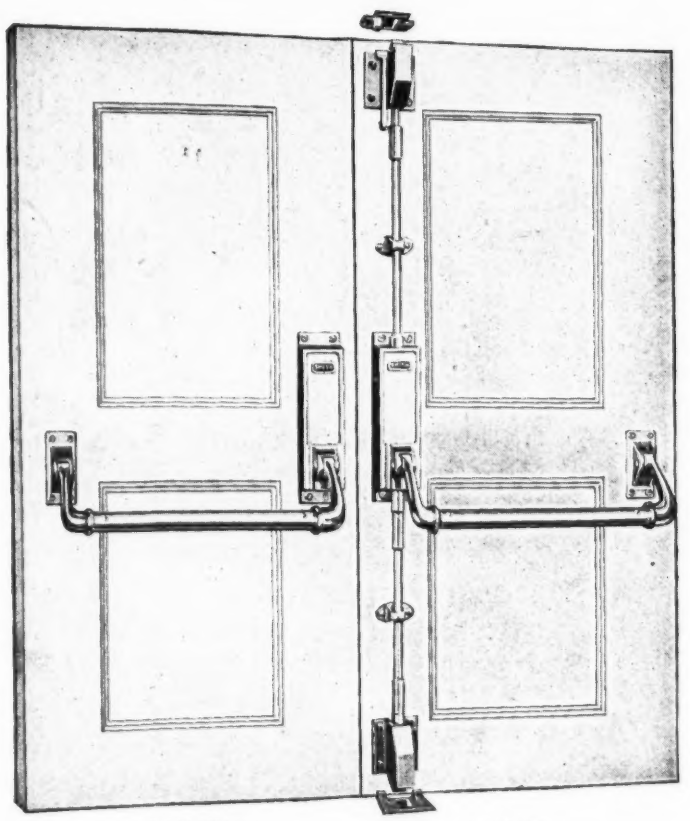
114 Fifth Avenue, New York

L. Sonneborn Sons, Inc. SBJ-11
114 Fifth Avenue, New York
Please send literature on the following products: LAPIDOLITH ☐ LIGNOPHOL ☐
CEMCOAT FLOOR ENAMEL ☐ CEMENT FILLER ☐ CEMCOAT ☐ SONOTINT ☐
AMALIE WAX ☐
.....
.....

SMITH'S IMPROVED PANIC EXIT LOCKS

NO. 80 LINE

Gravity Panic Exit Bolts



Inside View Has Outside Trim. *Inside View No Outside Trim.*

Bolts are operated by a slight pressure on the Cross Bar.

Bolts are not dependent on springs for opening or closing operation.

Simple but sturdy in construction and easily installed.

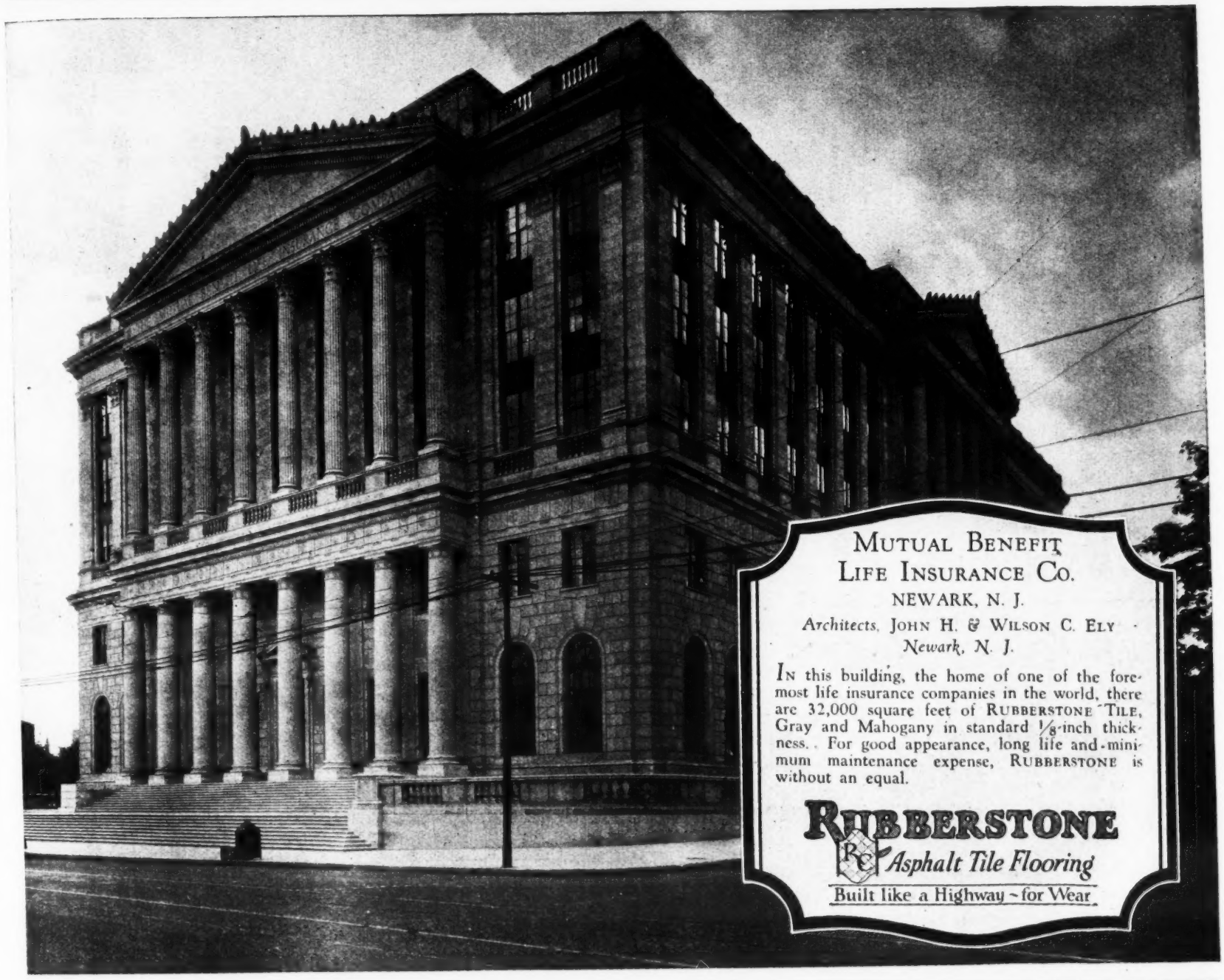
Will operate perfectly in connection with standard makes of door closers.

Catalogue No. 30 with Supplement "A" sent on request..

Manufactured by

THE STEFFENS-AMBERG CO.

260-270 Morris Ave.
NEWARK, N. J.


MUTUAL BENEFIT
LIFE INSURANCE CO.
NEWARK, N. J.
Architects, JOHN H. & WILSON C. ELY
Newark, N. J.
IN this building, the home of one of the foremost life insurance companies in the world, there are 32,000 square feet of RUBBERSTONE TILE, Gray and Mahogany in standard 1/8-inch thickness. For good appearance, long life and minimum maintenance expense, RUBBERSTONE is without an equal.
RUBBERSTONE
Asphalt Tile Flooring
Built like a Highway - for Wear

RUBBERSTONE

Asphalt Tile Flooring

Built like a Highway — for Wear

RUBBERSTONE CORPORATION, *One Madison Avenue,* **New York**

Offices or Distributors in Principal Cities of the United States

"Imperial"

Your guarantee of excellence

No. 243 meets the large demand for a teacher's desk low in price yet substantially built according to modern design. It may be had in quartered white oak, combination mahogany or walnut. Top is 5-ply with edges banded, showing figured wood on all surfaces. Panels are 3-ply. Drawers are hardwood and dovetailed front and back; 3-ply bottom framed in.

ORIGINAL COST does not determine the economy of school purchases. It is a very important factor indeed but its importance is tempered by the number of years over which it can be spread.

Due to rugged construction and the use of highest grade materials, the original cost of "Imperial" School Furniture is spread over an unusually long period. Its **Cost Per Year** is therefore low.

The **Original Cost** of "Imperial" School Furniture depends largely upon the finish desired. The Imperial Line of Teachers' Desks, Classroom and Library Tables, Office Desks and all types of chairs is complete in four grades from Plain Oak to the high grade Quartered Oak, Mahogany and Walnut. The trade name "Imperial" and the famous Imperial trade mark are your guarantee of excellence regardless of the grade selected.

Imperial DESKS for every office use — IMPERIAL DESK CO. EVANSVILLE, IND.

Look for this mark on all your desks and tables.

A complete catalog will be sent through our nearest distributor on request.

IMPERIAL DESK COMPANY

EVANSVILLE **INDIANA**

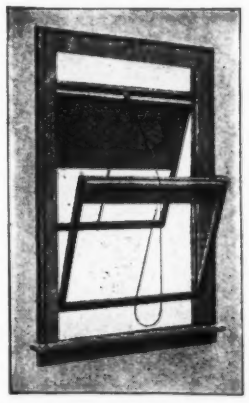
GOOD WINDOW SHADES

SAVE EYES!

and because of superior service

They Save Money

Rowles' Mastermade Window Shades possess many perfected mechanical features not offered by any other shade manufacturer.



Rowles' shades for all types of windows.

Rowles' Mastermade Shades are made to special measurements in our modern factory. Made and sold by school specialists with **thirty-two years experience in supplying the School Trade of America.**

"The Rowles' Shade Rolls on Hartshorn Rollers"

Genuine Hartshorn Rollers cost more than the "bargain basement" variety but our shades are guaranteed for 15 years—and Hartshorn Rollers give service the Schools require.

E.W.A. ROWLES CO.

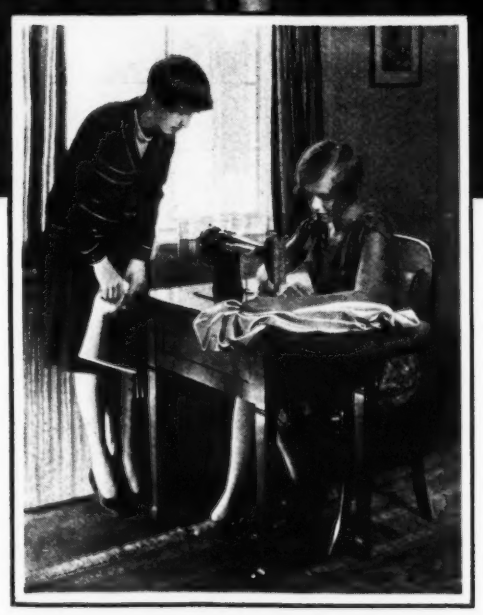
2345-2351 South La Salle Street

CHICAGO ILLINOIS

Dealers—Write for Agency; some Good Territory still open

THE OVERWHELMING CHOICE

Singer Machines in use in Murphy High School Mobile, Ala.



With a Singer Electric, they learn to love sewing as well as how to sew

The SINGER "STUDENT Model"

[ILLUSTRATED BELOW]

A modern electric sewing machine especially designed for classroom use, with these desirable features:

Special legs of any desired height.
Choice of built-in or attached motor.
Individual Singerlight · Adjustable knee control.
Cover, when opened, provides extra table length.
Safety lock on cover when closed.
Machine, when closed, becomes flat-topped table.
Choice of rotary or oscillating sewing mechanism.
Large capacity—horizontal round bobbin.
Upper and lower tensions easily regulated.
Automatic bobbin ejector.

Cabinet No. 402
Shown open, has three drawersat the left and an open compartment for books and materials at the right.

In Schools and Colleges
. . . *as in the Home*

It is easy to understand why in high schools, private schools, normal schools and colleges, Singer sewing machines are used almost exclusively for classroom instruction. The preference is based on sound reasons.

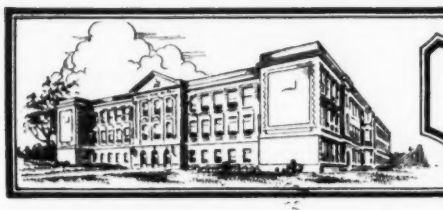
1. School training is a preparation for practical home life. Most homes are equipped with a Singer. Thus the student is trained on the machine she is most likely to use as a young woman, as a wife and mother.
2. Singer sewing machines are recognized the world over as the standard of perfection in design, in quality, in ease and simplicity of operation.
3. They have stood the test of practical use under all conditions and circumstances for 78 years—far longer than any other make.
4. They are sturdily built to stand hard usage by "beginners."
5. Singer provides free an educational service to schools and colleges.
6. Singer maintains in every city a shop where prompt and satisfactory service is always available—repairs, parts, needles, oil, belts, instruction, everything necessary to keep machines in perfect running order.
7. Singer renders to schools without charge a periodical inspection and adjustment service.
8. Special discounts are made to schools on all Singer models.

Singer sewing machines are used almost exclusively in schools throughout the world

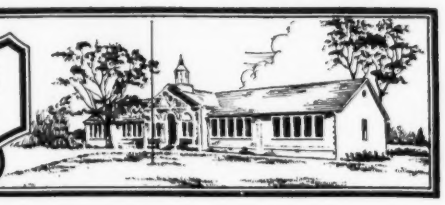
SINGER SEWING MACHINE COMPANY

EDUCATIONAL DEPARTMENT ~ SINGER BUILDING ~ NEW YORK CITY

Copyright, U. S. A. 1928 and 1929 by The Singer Manufacturing Co. All Rights Reserved for All Countries.



SCHOOL ARCHITECTS DIRECTORY



RALPH E. ABELL CO.
176 W. Adams Street
Chicago, Illinois
Architects and Engineers
Educational Buildings

COFFIN & COFFIN
ARCHITECTS
522 FIFTH AVENUE
NEW YORK CITY

GUILBERT & BETELLE
Architects
Chamber of Commerce Building
Newark, New Jersey

SAMUEL C. ALLEN
ARCHITECT
Educational Building Specialist
SAGINAW, MICHIGAN

FRANK IRVING COOPER CORPORATION
ARCHITECTS ENGINEERS
SPECIALIZING IN SCHOOLHOUSE PLANNING
172 Tremont St., Boston, Massachusetts

HACKER & HACKER
ARCHITECTS
SCHOOL SPECIALISTS
Fort Lee Trust Building, Fort Lee, N. J.
at the Plaza — Hudson River Bridge to New York City.

ALLMENDINGER & SCHLENDORF
ARCHITECTS
Williamsburgh Savings Bank Bldg.
No. 1. Hanson Place
Brooklyn, N. Y.

ANDREW L. DELEHANTY
ARCHITECT
121 No. Pearl St. Albany, N. Y.
Rooms 21 to 25

HAMILTON, FELLOWS & NEDVED
ARCHITECTS AND ENGINEERS
814 Tower Court, Chicago
Members of the American Institute of Architects

J. WILLIAMS BEAL, SONS
ARCHITECTS
185 DEVONSHIRE STREET
BOSTON, MASSACHUSETTS

RAYMOND A. FREEBURG
ARCHITECT
School Building Specialist
JAMESTOWN, N. Y.

Wm. G. Herbst, A. I. A. E. O. Kuenzli, A. I. A.
HERBST and KUENZLI
ARCHITECTS
Educational and Public Buildings
653 Franklin Place at Prospect Milwaukee, Wis.

F. E. BERGER R. L. KELLEY
ARCHITECTS
Specialists Educational Buildings
LINCOLN BUILDING, CHAMPAIGN, ILL.

Frederick W. Garber C. B. Woodward
GARBER & WOODWARD
ARCHITECTS
4 W. Seventh Street Cincinnati, Ohio

HERSH & SHOLLAR
Specialists in School Building Design
ALTOONA, PENNA.
Registered Architects in Pennsylvania
Members So. Penna. Chapter American Institute Architects

BONSACK & PEARCE INC.
WILL MAKE SURVEY OF YOUR NEEDS
Complete Architectural & Engineering
Services by School Specialists
411 Olive Street St. Louis, Mo.

C. M. GARLAND Light, Heat & Power J. A. SCRIBBINS Architect
GARLAND & SCRIBBINS INC.
ENGINEERS - ARCHITECTS
1163 First National Bank Bldg. Chicago, Ill.
SPECIALIZING IN EDUCATIONAL BUILDINGS

WARREN S. HOLMES COMPANY
ARCHITECTS AND ENGINEERS
Inventors of the "HOLMES" System of School Planning
Surveys made by our Educational Department
820 N. Michigan Avenue CHICAGO, ILL. 112 E. Allegan St. LANSING, MICH.

HARRY E. BOYLE & CO.
Architects and School Specialists
EVANSVILLE, IND.
Twenty Years Practical Experience
Licensed in Indiana, Illinois, Kentucky, Tennessee

MARTIN J. GEISE, Architect
I make a Specialty of Designing School Buildings in Illinois, Iowa, and Missouri. Over 20 Years Experience.
QUINCY, ILL. KEOKUK, IOWA
AND
8th and Main Sts. State Central Saving Bank Building, 6th and Main

WM. B. ITTNER, Inc.
Fellow, American Institute of Architects
Superior Architectural and
Engineering Service Rendered
Board of Education Bldg.
St. Louis, Mo.

WM. J. J. CHASE, A. I. A.
ARCHITECT
School Building Specialist
140 Peachtree St. Atlanta, Ga.

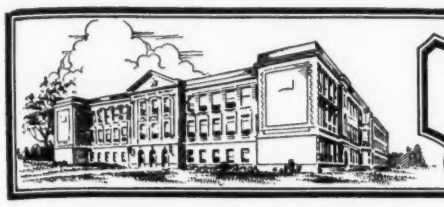
Betram E. Geisecke A. Watkins Harris
GEISECKE & HARRIS
ARCHITECTS
SPECIALIZING IN SCHOOL DESIGN
207 W. 7th St. AUSTIN, TEXAS
513 Second National Bank Bldg. HOUSTON, TEXAS

Richard Kiehnel A. I. A.
KIEHNEL & ELLIOTT
ARCHITECTS
930 Seybold Bldg., Miami, Florida
Schools and Colleges
Registered Architects in several States North & South

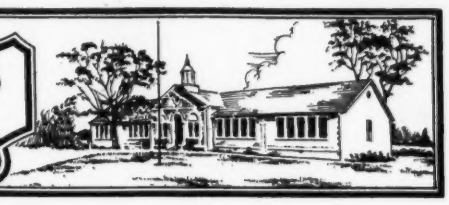
CARL W. CLARK A. I. A.
Savings Bank Building Cortland, N. Y.
Architect
Consultant and Plan Advisor-Mr. Frank H. Wood, former Director, Division of School Buildings and Grounds, New York State Department of Education.
New York Office-Suite 1432, 33 W. 42nd St.

FRANK B. GRAY
ARCHITECT
School Specialist
73 S. LA SALLE ST. AURORA, ILL.

LEE & HEWITT
MEMBERS, AM. SOC. C. E., MEMBERS, A. I. A.
152 Market St. PATERSON, N. J.
53 Park Place NEW YORK, N. Y.
Specialists in School Design,
Construction and Equipment



SCHOOL ARCHITECTS DIRECTORY



LEWIS & DOUGHERTY
ARCHITECTS
35 North Dearborn St., Chicago, Ill.

C. Godfrey Poggi
and
William B. Bragdon
ARCHITECTS
Elizabeth, New Jersey

STARRETT AND VAN VLECK
ARCHITECTS
Equitable Life Building
393 Seventh Avenue, New York, N. Y.

Joseph C. Llewellyn F.A.I.A. — Ralph C. Llewellyn M.W.S.E. and A.I.A.
JOS. C. LLEWELLYN CO.
ARCHITECTS and ENGINEERS
38 S. Dearborn St.
Chicago

IRVING K. POND, C.E., F. and Past Pres. A.I.A. — EDGAR MARTIN, A.I.A. M. Am Soc. C.E.
ALLEN B. POND, F.A.I.A. — ALBERT L. LLOYD A.I.A.
POND & POND, MARTIN and LLOYD
ARCHITECTS
180 North Michigan Avenue, CHICAGO, Ill.

TOOKER & MARSH
ARCHITECTS
101 Park Ave. New York City, N. Y.

Edgar E. Lundeen, A.I.A. — Philip R. Hooton, A.I.A.
Archie N. Schaeffer, A.I.A. — Edwin Roozen
Registered Architects
Lundeen, Hooton, Roozen & Schaeffer
ARCHITECTS
7th Floor Peoples Bank Building
BLOOMINGTON, ILLINOIS

H. D. Rawson A.I.A.
H. Clark Souers A.I.A.
Oren Thomas A.I.A.
PROUDFOOT, RAWSON, SOUERS & THOMAS
School Architects
Hubbell Building Des Moines, Iowa

CHARLES L. TROUTMAN
Registered Architect and Engineer
School Specialist
410 American Trust Building Evansville, Ind.

MALCOMSON & HIGGINBOTHAM
Architects
1217 Griswold St., Detroit, Mich.

RASMUSSEN & WAYLAND
ARCHITECTS
36 WEST 47th STREET
NEW YORK CITY

HENRY H. TURNER
Architect, Institutional Specialist
Michigan Trust Building Grand Rapids, Michigan
Architectural, Engineering Equipment and Consulting Service — Architect Board of Education City of Grand Rapids 1909 to 1920

WALTER R. McCORNACK
ARCHITECT
10006 Carnegie Avenue, Cleveland

GODFREY M. RICCI
ARCHITECT
FIRST NATIONAL BANK BUILDING
PERTH AMBOY, N. J.

Van Leyen, Schilling & Keough
Architects and Engineers
3440 Cass Avenue, Detroit, Michigan
Specializing in EDUCATIONAL and Society Buildings
Our Organization Embraces Architects and Specialists in Structural, Heating Ventilating, Electrical and Power Engineering

McGUIRE & SHOOK
ARCHITECTS
Specialists in Design of Educational Buildings
We also furnish Consulting Service to School Officials
INDIANAPOLIS, INDIANA

CHARLES M. ROBINSON — C. CUSTER ROBINSON
BENJAMIN A. RUFFIN — J. BINFORD WALFORD
CHARLES M. ROBINSON
ARCHITECTS
Schools and Public Buildings
Times Dispatch Building Richmond, Va.

H. J. VAN RYN, A.I.A. — G. J. DE GELLEKE, F.A.I.A.
VAN RYN & DE GELLEKE
ARCHITECTS
Fourteen Years-Architect School Board, Milwaukee, Wis.
726 CASWELL BUILDING, MILWAUKEE WIS.

W. H. McLEAN
ARCHITECT
713 TREMONT TEMPLE, 88 TREMONT ST., BOSTON, MASS.
Specialist in Designing and Planning of School Buildings

A. W. E. SCHOENBERG
ARCHITECT
OLEAN, N. Y.

S. HUDSON VAUGHN
ARCHITECT
Guarantee Trust Building
Atlantic City, N.J.

PERKINS, CHATTEN & HAMMOND
SCHOOL ARCHITECTS
MURRAY A. DALMAN,
EDUCATIONAL CONSULTANT
160 North LaSalle Street Chicago, Illinois

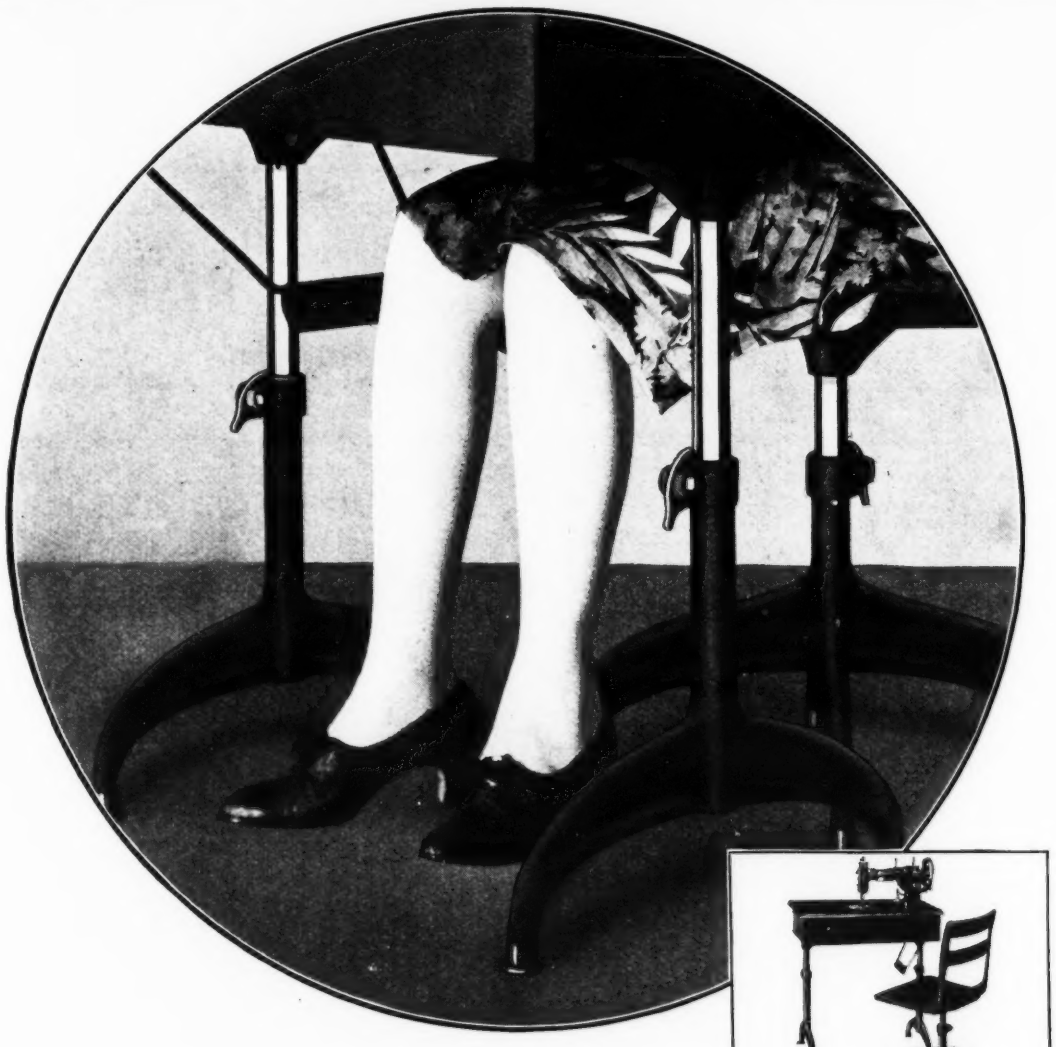
Ernest Sibley and Lawrence C. Licht,
ARCHITECTS
PALISADE, Studio on the Palisades — NEW JERSEY Opposite New York City

WELLS AND HUDSON
ARCHITECTS & ENGINEERS
Hanover - New Hampshire

Edward A. Peterson — Gilbert A. Johnson
PETERSON & JOHNSON
Architects Board of Education City of Rockford, Ill.
Sw. American Bank Rockford, Ill.

N. S. SPENCER & SON
ARCHITECTS
Specializing in Educational Buildings
180 N. Michigan Avenue CHICAGO, ILL.

Carleton C. Wood A. I. A.
EDWARD J. WOOD & SON
Architects
Specialists in School Design
We also furnish Consulting Service to School Boards
Lowndes Building Clarksburg, W. Va.



Adjustable to Size

. . . . an ideal classroom feature found only on the White "Educator"

A positive, simple adjustment and both chair and machine are at the right working height for either tall or small students. Here is workable comfort, correct posture, simplified learning for the student and easier teaching for the instructor.

Adjustability is but one of the features of the White "Educator Model" that fit it precisely for school use. Equally important are its vibration-free, rotary mechanism, its practical knee control, its non-glaring sewing light, its ample storage space, and extreme simplicity of operation. Of course, you will see all these features for yourself when you examine the only adjustable electric sewing machine designed especially for classroom use—the White "Educator Model" No. 401. When ordering, specify with or without chair. White Sewing Machine Company, Cleveland, Ohio

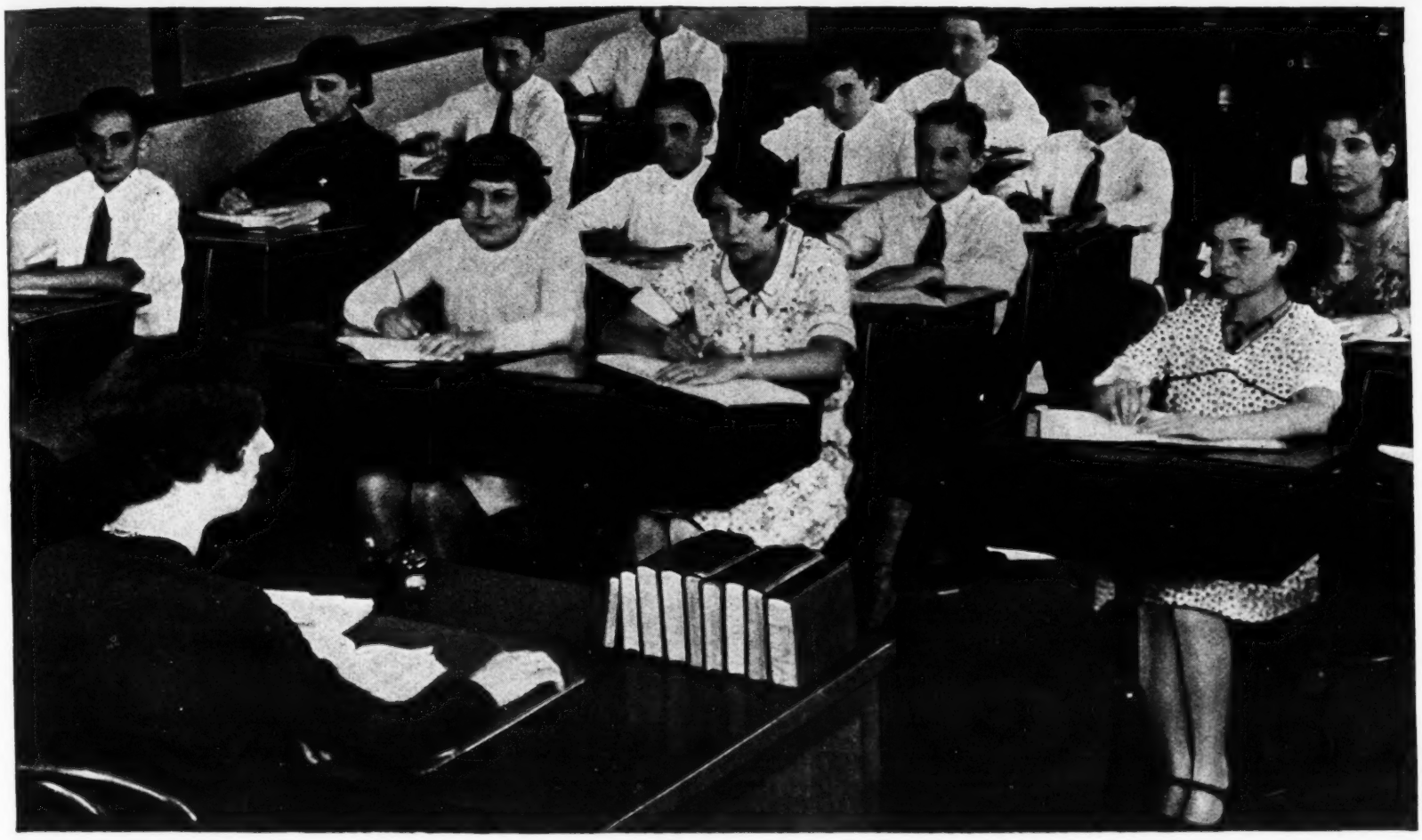
Distributed by
WHITE SEWING MACHINE CO.
Retail Stores in Principal Cities

White
"EDUCATOR MODEL"
Sewing Machines

Distributed by
THE THEODOR KUNDTZ CO.
District Offices and Distributors

© 1929, W. S. M. Co.

THE ONLY ELECTRIC CLASSROOM MACHINE ADJUSTABLE FOR CORRECT POSTURE



From the Teacher's Viewpoint

Row on row of comfortable little bodies, attentive little minds. No screeching desk tops —no squeaking seats. Just an orderly assemblage of blending olive green and maple brown desks and seats. Delightful, isn't it?...to teach, when classrooms are Kundtz Eclipse equipped.

Kundtz Leads The Way!

The Theodor Kundtz Company

CHURCH AND ECLIPSE AUDITORIUM SEATING

SCHOOL FURNITURE

Cleveland Ohio, U.S.A.

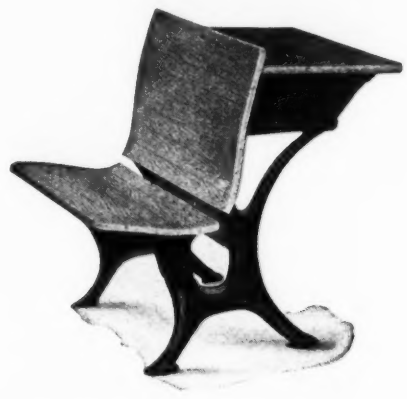
© 1929. The T. K. Co.

CHAIRS - DESKS - FOLDING CHAIRS - COMBINATION DESKS - ADJUSTABLE DESKS - THEATER CHAIRS

A COMPLETE LINE

Unexcelled in Design and Honestly Built

Right — Theater Chair No. 600A. is the Ideal seating equipment for school auditoriums.



Left—The "Panama" combination desk with noiseless hinge and the new Double Lip and Undercut method of joining wood and iron.

Below—The most popular folding chair made is the famous Peabody No. 70.

North Manchester

Twenty-six years of square dealing with American Schools has firmly established the Peabody reputation for quality of product and quality of service. We offer you without cost, the service of our seating experts in the solution of *your* problems.

Send for the latest Peabody Catalog.

The Peabody Seating Co.

Formerly the Peabody School Furniture Co.

Below—Peabody Portable Assembly Chair Sections are *built* together — not simply individual chairs fastened to long section strips.

Indiana

TABLET ARM CHAIRS - RECITATION SEATS - MOVABLE CHAIR DESKS - TEACHERS' DESKS - ASSEMBLY CHAIRS

COMPACTNESS

Is one of the important features of the **VIKING** Steel Folding Chairs. They fold perfectly flat and stack solidly. The **VIKINGS** require a surprisingly small amount of storage due to their compact folding feature.

CONSIDER THESE **VIKING** FEATURES

VIKING NO. 500

STURDINESS	ATTRACTIVENESS
RIGIDITY	*COMPACTNESS*
INDESTRUCTIBILITY	BALANCE
ECONOMY	QUIETNESS
COMFORT	LOW PRICE

VIKING NO. 1000

MAPLE CITY STAMPING COMPANY

PEORIA, ILLINOIS

New Designs of INDESTRUCTO SANI-STEEL School Furniture

STRUCTOFOLD STYLE

STRUCTOFOLD CHAIRS for STRENGTH and ECONOMY

Guaranteed to endure hard usage. Our special circular gives a choice of many designs. Any chair may be had with plywood scroll seat, with steel scroll seat as in BOS or with a steel flat seat. In some numbers a choice of plywood or steel back is given. Any pattern may be fastened in racks or rows @ $3.00 per dozen.

Prices per dozen. HPS $25.00; BOS and APW $20.00.

APW

BOS

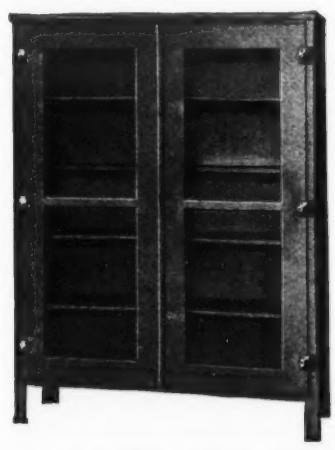
INDESTRUCTO CORRECT POSTURE MOVABLE ADJUSTABLE DESK

The back and seat are curved to fit the body and support the pupil in the correct posture as ascertained by the Correct Posture League and other authorities. A great advance in School Seating, seat top and back are of maple plywood built with casein glue, finished in schoolroom brown. Steel frames in olive green unless otherwise ordered. Prices including inkwell Nos. 1 and 2—$5.25; Nos. 3 and 4—$4.95; Nos. 5 and 6—$4.65. Drawers, all sizes, 95 cents.

3495

SANI-STEEL INSTRUCTOR'S DESKS sold during July, August and September, 1929

This desk may be had with two drawers at $13.00; four drawers at $17.00; with five drawers at $19.50. It has a steel frame and body that is finished dark olive green. The top and drawers of five-ply built up quartered oak, finished dark golden.



No. 65 STEEL BOOK CASE WITH DOORS

Dimensions: 12 in. deep by 40 in. wide by 55 in. high, each $30.00.

COLUMBIA INDESTRUCTO CHAIR

Sturdily constructed with posture seat and back. Large size $2.85; Kindergarten size $16.00 per dozen.

Have YOU sent for our NEW CATALOG?

THE DUCHESS AUDITORIUM CHAIR

Beautiful, dignified, comfortable. Standards of pressed steel with noiseless double ball and socket hinge, finished olive green unless otherwise ordered. Seat and back of 5 ply 7/16 maple of the proper curves, finished dark mahogany unless otherwise wise ordered. Each $3.50, with ¾-inch back $3.75.

COLUMBIA SCHOOL SUPPLY COMPANY, INDIANAPOLIS

SILENT GIANT
COMBINATION DESK

Absolutely the first Sanitary Desk offered. All have imitated its general outline—none have excelled its quality.

ACADEMIC CHAIR DESK

A step ahead of other desks of this type—has perpendicular and horizontal adjustment.

THE NEW SANFORD
MOVABLE DESK

The original of its type. It has been freely imitated but never equaled.

We are not Expert

in the manipulation of eight and ten syllabled words lauding our product, but

we ARE Expert

in the designing and manufacture of

SCHOOL DESKS *and*
SEATING FOR SCHOOL AUDITORIUMS

Fifty-four years of bona fide actual experience has made us so, and we proudly claim that our new improved and augmented line is second to none in the world.

A Style to Suit Every Preference
A Quality to Satisfy the Most Exacting
A Price to Fit Every Purse

If you contemplate purchase of school furniture, it will be to your interest to get in touch with us. By all means send for our New Catalog.

If you are dealing in school equipment let us acquaint you with what we have to offer. We have some territory open to offer high class representatives.

ARLINGTON SEATING CO.

Arlington Heights, Ill.

No. 600 ADJUSTABLE
PEDESTAL DESK

Simple rigid perpendicular adjustment. Automatic "plus and minus" adjustment.

EVERFAST PEDESTAL DESK

The first double stem pedestal desk ever offered. There are imitations of this desk but none to compare.

PEDESTAL TABLET
ARM CHAIR

A standard design with a superior quality.

No. 44

No. 44 Swinging Slat Back

Many features developed throughout our years of experience as Folding Chair manufacturers have been incorporated in this model. It folds perfectly flat, is nontipping and will stand up nobly under severe use.

STANDARD

AS shown in the illustration to the left, the No. 44 Standard Folding Chair folds perfectly flat. Thus quite a number of chairs can be stacked where previously there were only a few. The resultant economy of space makes it advisable to buy chairs that stack flat.

However, if you desire a chair of finer appearance there is the No. 90 Folding Chair. These chairs can be used any place at any occasion and will enhance the appearance of the room wherever they are used. Although this model does not fold flat it stacks very compactly.

Besides these two there are twelve other distinctive styles of Standard Folding Chairs each answering its purpose nobly whatever the need it is put to.

We are anxious to send fully illustrated literature. Please write.

STANDARD MFG. CO.

Cambridge City, Indiana, U. S. A.

No. 90

No. 90 5-Ply Veneer

The folding chair shown above is the pride of the Standard Line. It is very comfortable, strong, neat in appearance and folds compact. The most critical buyer will find that the construction meets his strictest requirements.

GROWING PREFERENCE

Based on Scientific Correctness

That expresses tersely the reason for the ever growing popularity of our school seats which are scientifically planned to aid the mental development of our growing boys and girls by keeping their bodies in a comfortable, healthful posture during the hours of their study. Incidentally, they are manufactured of the finest steel and woods obtainable, and their volume production by famous Grand Rapids craftsmen makes them unquestionably the greatest value in school-seating today. Our complete, descriptive catalog will prove these facts to you. We are anxious to mail you a copy. Write for it NOW.

DESIGNERS BUILDERS PLANNING SERVICE

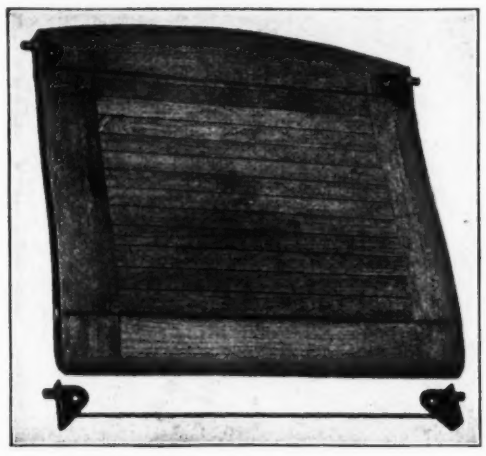
STEEL FURNITURE CO.

GRAND RAPIDS, MICHIGAN

Built for a Lifetime of Service—

MAHONEY CHAIRS

EXCEL IN STRENGTH AND ECONOMY

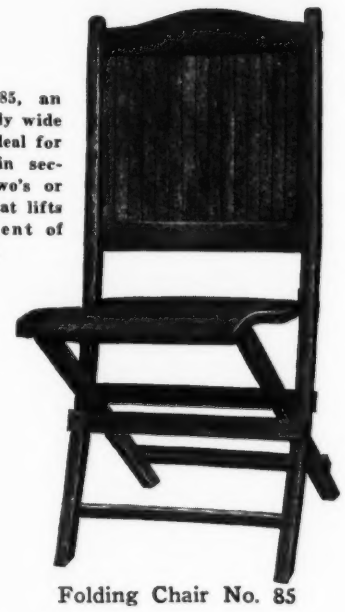


The Re-enforced Seat as used on all Mahoney slat seat portable chairs absolutely insures against pulling apart at the joints and adds 100% to the life of chairs. Seat pivots on a solid steel pin acting on a brass bushing set in the standard. This assures a free-acting, noiseless hinge.

Mahoney Chairs are sturdily built to be slammed and banged and stacked and unstacked and otherwise abused day-in and day-out. They are generally acknowledged the strongest line on the market. Yet Mahoney Chairs sacrifice not one bit of comfort in order to achieve sturdiness. Correctly shaped posture seats and scientifically designed backs that are free from protruding cross members bring a measure of ease which will surprise you unless you are already accustomed to these superior portable chairs. You sit IN a Mahoney Chair, not ON it!

Write for Complete Catalog No. 16

Our No. 85, an exceptionally wide model, is ideal for stripping in sections of two's or three's. Seat lifts independent of short legs.



Folding Chair No. 85

THE MAHONEY CHAIR CO.

Central and Western Sales Office

230 East Ohio Street, Chicago

Factory and General Offices—Gardner, Mass. **Showrooms—New York City, Boston, and Hartford, Conn.**

ASSEMBLY SEATING

The features of No. 251 are so distinctly favorable in its type as to make it a class by itself. Its continuous back, serpentined to comfortable curves, covers the necessity of reinforced glue tenons or dowels. The wood parts of the folding seat are dadoed to steel arm supports—avoiding a glue framed construction. The seat is frictioned to prevent noise and does not hit the back when folded. The shape and thickness of the legs overcome splitting or chattering over the floor. When folded these chairs stand alone with feet on the floor and they may stacked without marring. They are sturdy, comfortable and made of oak.

BRUNSWICK SEATING WORKS, INC.

(Licensed Manufacturers)

LAWRENCEVILLE, VIRGINIA

Modern Schools have Adopted this Inkwell

Air-Tight — Non-Evaporating — Dust-Proof

Here is the new, improved, all-hard-rubber Sengbusch Self-Closing Inkstand. No breakage, saves books and clothes. No school can afford to do without them.

SAVES 75% OF YOUR PRESENT ANNUAL INK BILL

Adopted as standard by the business world. Millions in use giving satisfactory service. Simple to install, no special tools required. Further information will gladly be sent to you on request.

Sengbusch

Self-Closing Inkstand Company

818 Sengbusch Building, Milwaukee, Wis.

DESKS THAT INSURE Last Hour Comfort

When pupils must turn in their seats to write comfortably, the body is thrown in a tiring position — the light strikes and tires the eyes, the posture being wrong brings weariness. Children let up on "last hour" studies, they get into trouble and worry the teacher.

Avoid last hour strain on the part of pupils and nervous strain on the part of teachers by equipping with **National Seats of Comfort** with the famous

MOESER EXTENDED ARM

Adds to Pupil's Comfort

In National Desks, equipped with the Moeser Extended Arm, pupils sit squarely in their seats. The back is supported when writing—working space is more than doubled —no turning to rest arm while writing—eliminates facing light and uncomfortable positions that bring on "last hour uneasiness." When writing, the arm is supported, resulting in better penmanship. National Desks are shaped to conform hygienically to the human figure — they encourage correct posture — insure greatest comfort — less fatigue — less eye strain—better grades in last period classes and less worry and nerve strain on the instructor.

No. 101. Combination Desk with Moeser Arm Top. Standards finished in durable, baked enamel; woods, in National Process finish, both in a soft brown color.

THE NATIONAL SCHOOL EQUIPMENT CO.
Manufacturers of Complete School Equipment
PORT WASHINGTON, WIS.

Write for School Equipment Catalog

If you are a buyer of School Equipment you will want our latest catalog on School Desks. All types of school chairs and teachers' and office desks. We will send our catalog free and prepaid on request.

NATIONAL School DESKS
"Famous for Comfort"

Better Tables

No. 321-A — of Selected Quartered White Oak. Four sizes. Standard Office Dull Rubbed Finish.

No. 329—Of Plain White Oak. Five sizes. Drawers are dovetailed back and front. Standard Finish; special colors at extra cost.

Samson Design Assures Service

During the thirty-three years Mutschler Brothers have devoted to the manufacture of fine tables, many notable features of construction have been developed. These combine to make the present line of Samson Tables the sturdiest, most attractive, and most reasonably priced tables (quality considered) ever offered to schools.

Standard Samson design and construction is used throughout the entire line, assuring the utmost service and utility regardless of the type of table selected. The very wide range of styles and sizes guarantees a table suited to almost any requirement.

You should investigate the exclusive features of Samson Tables before you make a purchase. You will find our catalogs very interesting.

SAMSON TABLES — TRADE MARK REGISTERED — MUTSCHLER BROTHERS CO. NAPPANEE, IND. U.S.A.

This mark is your guarantee of Workmanship and Quality. Look for it on all tables.

Send for our catalogs describing Samson and Porce-Namel Tables, the finest School and Domestic Science equipment made.

Mutschler Brothers Co.

BETTER TABLE BUILDERS
Since 1896
Nappanee, Indiana

Sturdy Little Chairs

JONES — The Standard Line — LOUISVILLE

Correct Posture

should be given first consideration in the selection of seating equipment for little children. At kindergarten age life habits of posture are being formed, and it is at this age that children may benefit most from modern, scientifically designed, correct posture seating.

The first thought in the design of Jones Kindergarten Chairs is to provide safe and proper support so that the healthful physical development of little children may be aided rather than hindered. But in addition, Jones Kindergarten Chairs are made as staunch and sturdy, as the strongest of adult chairs. They will withstand rough usage and abuse beyond all normal requirements and they are, in fact, juvenile chairs only in size.

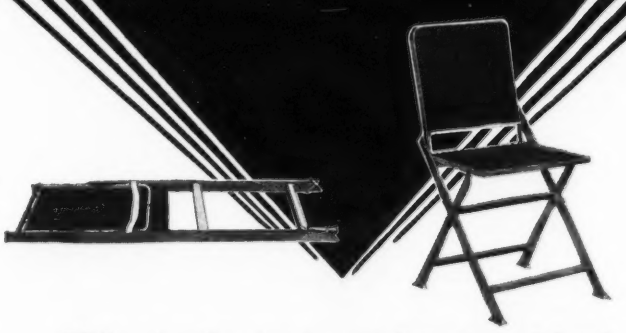
No. 1473—10″

No. 1474—12″
No. 1475—14″

Write for our School catalog and specify— "Jones—The Standard Line"

STANDARD SCHOOL EQUIPMENT CO.
Siler City, N. C.

BUY Algoma Steel Folding Chairs *direct from the Factory*



This sturdy steel, wood seat and back chair — $26.40 per dozen

A solidly built chair that cannot collapse—yet compact so that when folded it occupies space less than 1½″ deep. Three-ply waterproof veneer seat and back which cannot warp nor split—steel parts will not break nor bend.

—and it's comfortable, too. The back is set at the right angle—rigid—you can't tip it even by standing on the edge of seat.

Finished in four attractive colors, Algoma Steel Folding Chairs meet all seating requirements for halls, gymnasiums, etc. Thousands in use today. Let us show you a sample — you'll be surprised with the quality. Our price is low because we sell direct to schools. Write for complete description.

METAL SPECIALTY CO.
Algoma, Wisconsin

Algoma Steel Folding Chairs

Leadership

MONARCH of Movables—
Unconditionally the best
—Constructed to withstand the abuse of healthy young children, yet keep them healthy too—through proper posture.

THE ROYAL CHAIR
"A Lifetime Chair"

CORRECT POSTURE MEANS SADDLE SHAPED SEATS

ROYAL METAL
Manufacturing Company
1130 So. Michigan Boulevard
CHICAGO

For ECONOMY and SERVICE

TRADE MARK REG
SLATEBESTOS
The Permanent Blackboard

Once installed, Slatebestos becomes a permanent part of the building—thus assuring the utmost in blackboard satisfaction as long as the building is used.
Slatebestos actually improves with age. Its superior writing surface is non-reflecting and velvet smooth with just enough "bite" for easy writing—and how cleanly it erases! It is easily and quickly installed and its low upkeep cost spells real economy. Of course, Slatebestos is fire resistant.

Send for Free Samples

Simplex Bulletin Board and Tack Strips

Not ordinary pressed cork but the highest quality composition bulletin board which admits pins and thumbtacks easily, holds them securely, and which seals itself immediately after they are removed. Boards are ¼ inch thick, cemented to a heavy burlap backing, and are available regularly in 12 and 18-inch widths, furnished to fit spaces of any length. Special sizes cut also to fit panels, etc.

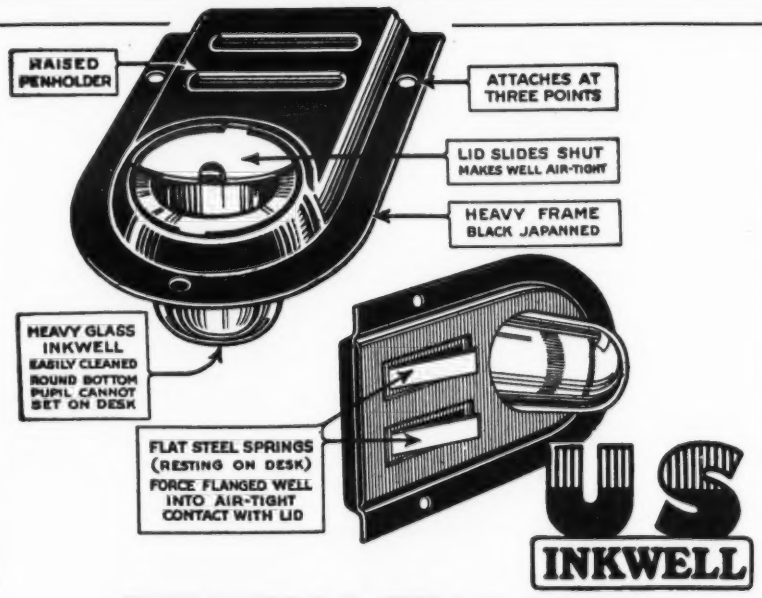
Other Exclusive B-C Products

Slatoplate and Slaterock Blackboards
Neverip and Simplex Noiseless Erasers
Premium Dustless Crayon

BECKLEY - CARDY COMPANY

Manufacturers of Blackboards, Bulletin Boards and School Equipment

17 East 23rd Street **Chicago, Illinois**



U S INKWELL

INKWELLS THAT LAST!

HUNDREDS more school boards every year are standardizing on U. S. Inkwells for replacements as well as standard equipment. They know from experience that this inkwell costs little, works well, and outlasts two or more ordinary inkwells.
The U. S. Inkwell is dustproof and noiseless. It does not tempt pupils to waste time.
U. S. Inkwells can pass your most rigid examination. Check the answers to these questions:

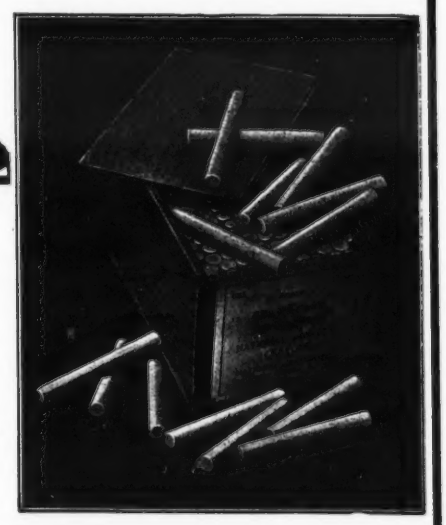
1. ***Is it easy to install?***
   Yes, just drive in three tacks.
2. ***Will it fit our desks?***
   Yes, it fits desks of any size. (Made in two sizes—Sr., Jr.)
3. ***Is it quiet?***
   Yes, the lid does not rattle nor creak.
4. ***Is it economical?***
   Yes, because of low purchase cost and unusually long life.
5. ***Has it any special advantages?***
   Yes, the tight-fitting lid keeps out dust and prevents evaporation. Pupils cannot tinker with it as easily as with the average desk well.

SEND FOR FREE SAMPLES TODAY
U. S. Inkwells are made and furnished with two size wells, one twice larger than the other. Write for samples of each so that you can see why it is much worth while to specify U. S. Inkwells—and determine which size best meets the needs of your school. You can get U. S. Inkwells from any school supply jobber or direct from our factory. Write today for prices and samples.

U. S. INKWELL COMPANY
406-20 S. W. 9th STREET **DES MOINES, IOWA**

NATIONAL
DUSTLESS CRAYONS

are truly Crayons of Character

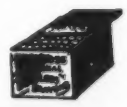


Free of grit from tip to tip NATIONAL CRAYONS respond perfectly to every stroke.

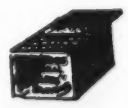
Being uniform in strength, every piece of NATIONAL CRAYON will withstand a firm grip of the fingers without danger of breaking or crumbling.

The dustless feature, combined with uniformity in all other respects, makes NATIONAL the ideal crayon for the classroom.

Your regular school supply dealer can serve you. If not, write direct.



THE NATIONAL CRAYON CO.
West Chester Pa.



WRITE FOR OUR SCHOOL SUPPLY PRICE LIST

SANFORD'S Inks and Paste for Schools

FOR 70 YEARS "SANFORD'S" HAS STOOD FOR HIGHEST QUALITY

THIS INK WILL NOT THICKEN IN WELLS

Sanford's School Black Ink is a black aniline ink and is especially satisfactory for general school purposes. It will not thicken in the ink well. It writes a deep black and dries black.

No. 711—Quart

BLUE BLACK SCHOOL INK

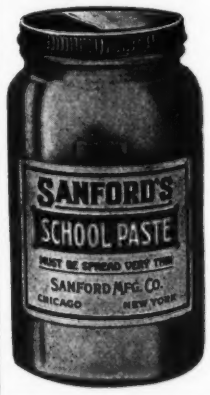
This ink writes blue and dries black. It is a very serviceable school ink—permanent, and most satisfactory for composition book use.

A Reputation Merit has Won

Sanford's Products have been used in schools for three generations, and have established, by merit and service, a reputation known to all School Supply Buyers, for highest quality.

In supplying their schools with Sanford's Inks and Pastes, buyers take no chances—they know they are getting the best quality products on the market.

SANFORD MANUFACTURING CO.
CHICAGO NEW YORK



ECONOMICAL SCHOOL PASTE IN FOUR SIZES

Sanford's School Paste is a white, clean paste, put up especially for school use. Its quality is vouched for by Sanford's, and its price makes it the most economical to use. There are four sizes: No. 751—Quarts; No. 752—Pints; No. 755—Gallons; also in half gallons.

BEST INK FOR SCHOOL OFFICE

Writes Bright Blue Turns Jet Black

Sanford's Premium Writing Fluid is the ideal ink for use in the school office, as well as in all business offices and homes. It writes a navy blue, which is easy to read, and in a short time turns to an intense and permanent black. It has defied time for over 70 years.

For all records where **absolute permanency** is required, use Sanford's Premium Writing Fluid. It never fades.

LIBRARY PASTE

Sanford's Library Paste sticks instantly and holds. It remains soft and moist indefinitely in the water-well package. Never stains. Is the most satisfactory paste for the office of the school.

THE IDEAL FOLDING CHAIR

is usually the final choice of the discriminating buyer.

Send the coupon for a sample— it will tell why!

CLARIN CHAIRS are made of steel (excepting seat and rubber floor contacts) and will not mar the finest floor nor damage the most delicate floor covering.

Clarin Mfg. Co., 2446 N. Crawford Ave., Chicago, Ill.

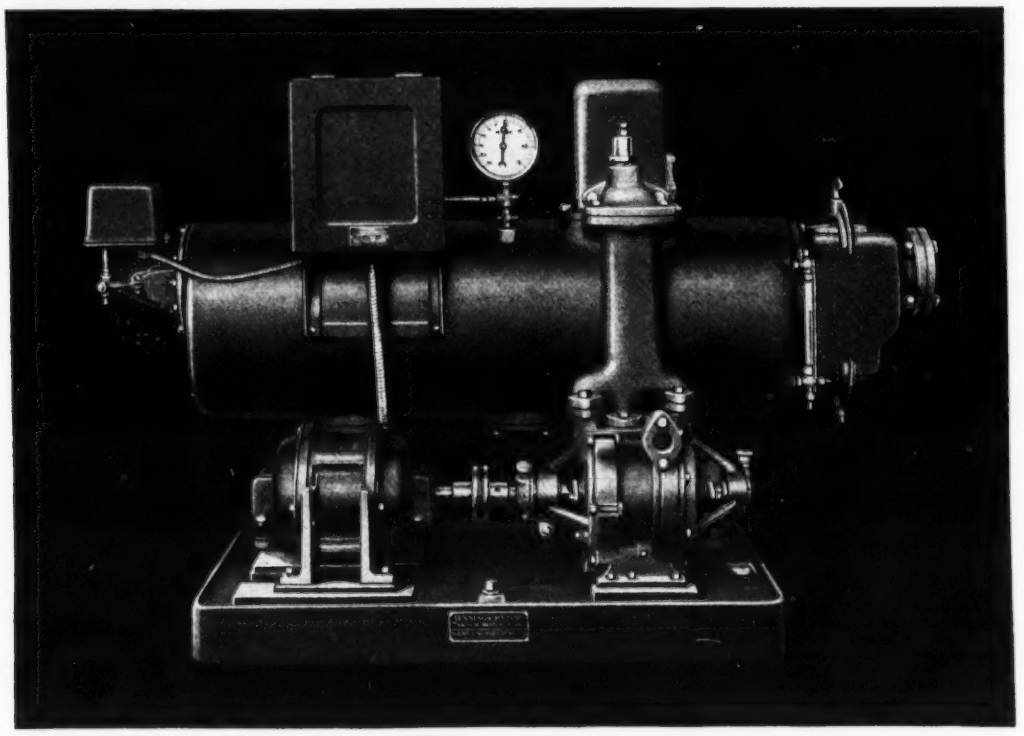
Please send by parcel-post prepaid—sample CLARIN CHAIR, finish and seat as checked.

☐ Brown (walnut) ☐ Battleship Gray ☐ Wood Seat
☐ Maroon (mahogany) ☐ Olive Green ☐ Leatherette Seat

We will either return it or pay for it after a reasonable trial.

Signed.....

Address.....



Jennings Vacuum Heating Pumps are furnished in standard sizes with capacities ranging from 4 to 400 g.p.m. of water, and 3 to 171 cu. ft. per min. of air. For serving up to 300,000 sq. ft. equivalent direct radiation.

A disciplinarian—

for your heating system

EXPELLING unruly air and condensation from return lines and radiators, the Jennings Vacuum Heating Pump keeps the school heating system always obedient . . . makes it quickly responsive to varying heating demands. Proper, healthful classroom temperatures regardless of weather conditions, efficient operation and economies in fuel consumption result.

Operating costs are low. Handling air and water separately, the Jennings Pump discharges air direct to the atmosphere; water only is pumped against boiler pressure. Power is saved. Simplified design and construction assure long life and dependability. No costly repairs or replacements . . . occasional lubrication and packing is the only attention required.

RETURN LINE AND AIR LINE VACUUM HEATING PUMPS . . . CONDENSATION PUMPS . . . COMPRESSORS AND VACUUM PUMPS FOR AIR AND GASES . . . STANDARD AND SUCTION CENTRIFUGAL PUMPS . . . HOUSE SERVICE PUMPS . . . SEWAGE EJECTORS . . . SUMP PUMPS . . . FLAT BOX PUMPS . . . MARINE PUMPS

Jennings Pumps

THE NASH ENGINEERING CO 11 WILSON ROAD, SOUTH NORWALK CONN.

VOL. 79
No. 5

THE AMERICAN School Board Journal

A Periodical of School Administration

NOVEMBER
1929

Eastern Office:
342 MADISON AVENUE
NEW YORK, N. Y.

Published on the first day of the month by
THE BRUCE PUBLISHING COMPANY
354 Milwaukee St., Milwaukee, Wis.

Western Office:
66 E. SOUTH WATER STREET
CHICAGO, ILL.

TABLE OF CONTENTS

Cartoon: "Get Out! This Money Can Be Used to Better Advantage!" 33
Harold Heaton
The Coming of Aline 34
Muriel Stafford
The Relation of the Board of Education to the Staff 35
Willard S. Ford
Why Some School-Board Members Refuse Reelection 37
A Problem in the Training and Selection of the Superintendent of Schools 38
Ernest O. Melby
The Hard-of-Hearing Child 38
Henry S. Curtis
Playground Surfacing 39
Raymond R. Hutchings
School Furniture Brown 40
J. W. McClinton
Care of the School Plant 40
Getting Research Into Practice in a Large School System 41
John L. Stenquist
Factors in the Efficiency of School Heating 43
R. C. Demary
Improving the Qualifications of Teachers of Special Subjects 45
T. Howard Winters
The Courts and Methods of Pupil Transportation 46
Neal Duncan
The Financial Control of Student Activities 48
W. H. Myers
Some Interesting New England Schoolhouses 49
Charles G. Loring, Architect
The George Washington Junior High School, New Castle, Pennsylvania 53
A Corridor-Vented Schoolhouse—The Benjamin Franklin School at Royal Oak, Michigan 55
An Interesting Branch Library 56
The Elementary-School Principal and His Job 57
W. J. Klopp
Educational Specifications for School Buildings 61
George F. Womrath
A Plan for Grade Supervision in a Small City 64
Frederick Leighton
Consolation Letters from School-Board Members to Defeated Candidates 64
Carroll Atkinson
Fire Hazards Reduced in San Francisco Schools 93
C. W. Geiger
High Interest Rates for School Bonds Continue 94
Harold F. Clark
Conserving the Time of the Small-Town Administrator 120
A. J. Huggett
Bus Transportation of Pupils 120
A Practical and Simple Scheme for Grading Pupils 138
Joseph Dostal

EDITORIALS:

The School Board and a Critical Public 62
State School Support and the Severance Tax 62
The Problem of a Growing School Population 62
Honoring Members of Boards of Education 62
Common Misconceptions Regarding School Textbooks 63
Unseen Factors in the School-Supply Industry 63
Is Corporal Punishment a Thing of the Past? 63

Washington Correspondence 68
A. C. Monahan
School-Law Notes 73
School Hygiene and Sanitation 76
Superintendents 80
Building News of the Schools 84
School Finance and Taxation 96
School Administration Notes 104
New Rules and Regulations 112
Chicago Correspondence 114
Personal News of School Officials 116
A Study of School Ventilation in Rural New York 143
Book News and Reviews 148
Publications Received 156
After the Meeting 170
Buyers' News 170

THE NEW SCHOOL BOARD MEMBER!

There is no finer aspiration in the direction of civic service than that which prompts a citizen to seek a place on the local board of education. It affords an opportunity to render a real service to the community. When that service is weighed and measured in all its aspects, it will soon become clear that there is no position of a public character which promises a greater contribution to the progress of the community than that of a school-board member.

But it is more than a mere contribution to community progress. It is a service to the state, and to the nation. The community is an integral part of a great country, and no country can be great unless the several units therein make for that greatness.

The new member of a board of education, ambitious to make a record for himself and for the school system with which he is identified, can do no better than to equip himself with that class of current literature devoted to the subject of school administration.

The AMERICAN SCHOOL BOARD JOURNAL is not only the pioneer in school administrative service, but is the outstanding exponent of all that is best in the government and management of the public schools. The new board member finds the publication a reliable guide in all problems that come within the province of his important office.

The Editor.

Copyright, 1929, by the Bruce Publishing Company. All rights reserved. Title registered as Trade Mark in the United States Patent Office. Entered as Second Class Mail Matter in the Post Office at Milwaukee under Act of Congress of March 3, 1879.

Subscriptions—In the United States and possessions, $3.00 per year. In Canada $3.50. In foreign countries $4.00. Single copies, not more than three months old, 35 cents; more than three months old, 50 cents. Sample copies, 35 cents.

Discontinuance—Notice of discontinuance of subscriptions must reach the Publication Office in Milwaukee, at least fifteen days before date of expiration. Notice of changes of address should invariably include the old as well as the new address. Complaints of nonreceipt of subscribers' copies cannot be honored unless made within fifteen days after date of issue.

Editorial Material—Manuscripts and photographs bearing on school administration, superintendence, school architecture, and related topics are solicited, and will be paid for upon publication. Contributions should be mailed to Milwaukee direct, and should be accompanied by stamps for return, if unavailable. Open letters to the editor must in all cases contain the name and address of the writer, not necessarily for publication, but as evidence of good faith.

The contents of this issue are listed in the *Education Index* and *Current Magazine Contents*.

Keep These Points in Mind

When you Select

Electric Time and Kindred Equipment

1. **Experience and reputation of company**
2. **Reliability of product**
3. **Low maintenance cost**
4. **Efficient Sales-Service Co-operation**

All "Standard Electric Time Company" products meet these requirements in a most satisfactory manner.

Manufactured by a Company with nearly a half century's experience.

Architects and School Officials everywhere know they can rely on "Standard."

New and Old High School, Glasgow, Montana
Shanley & Baker, Archts., Great Falls, Montana

An important western school recently equipped with Standard Electric Time.

Electric Time Systems for either battery or A.C. operation
School Fire Alarm Equipment, both open and closed circuit types

School Telephone Systems

Science Laboratory Panels for furnishing current at variable potential

Let "Standard" furnish the complete low tension equipment for your next school and gain the many important advantages which "Standard" alone can give.

ONE GUARANTEE COVERING ALL— ONE EXPERT SERVICE COVERING ALL

THE STANDARD ELECTRIC TIME COMPANY

SPRINGFIELD, MASS.

The Standard Electric Time Co. of Canada, Ltd., 726 St. Felix St., Montreal, P. Q. Canada.

204 Glenn Bldg., Atlanta, Ga.
2 East Redwood St., Baltimore
2920 7th Ave., S. Birmingham
10 High St., Boston
901 Stock Exchange Bldg., Buffalo
217 Latta Arcade, Charlotte, N. C.
1510 Monadnock Bldg., Chicago
1333 Union Trust Bldg., Cleveland
83 South High St., Columbus
716 Mercantile Bank Bldg., Dallas
562 Penn Street, Denver
806 Donovan Bldg., Detroit
Mutual Bldg., Kansas City, Mo.
Rm. 670-124 W. 4th St., Los Angeles
745 McKnight Bldg., Minneapolis
50 Church Street, New York City
1612 Market St., Philadelphia
Bessemer Bldg., Pittsburgh, Pa.
65-1st Street, Portland, Ore.
1 Drumm St. San Francisco
148 Adams Ave., Scranton
918 Western Ave., Seattle
110 S. Cedar St. Spokane
114 W. Alfred St., Tampa

"STANDARD MAKES EVERY MINUTE COUNT"

THE AMERICAN
School Board Journal

Founded March, 1891, by WILLIAM GEORGE BRUCE

Volume 79, No. 5 | NOVEMBER, 1929 | Subscription, $3.00 the Year

THE PUBLIC SCHOOLS
$250,000,000. !!
ANNUAL WASTE IN AMERICAN EDUCATION DUE TO CARRYING SLUGGARDS FROM TERM TO TERM —
HIGH SCHOOL LOAFER
TAX PAYER
Harold Heaton

"Get out! This money can be used to better advantage!"

The Coming of Aline

Muriel Stafford

Miss Deane lifted her bowed head from the morning prayer and smiled a little. Such a beautiful day! Forty raised faces smiled back happily, though Miss Deane didn't notice them just then. She was very young, and spring is spring, even in a schoolroom.

"Let us sing the 'Star-Spangled Banner.'"

Forty childish voices vigorously sang the national anthem while Miss Deane's thoughts danced along, "How perfect that he should be the new physical director. . . . He might have gone to so many other towns instead of this one. . . . When I first saw him at the parent-teacher meeting last night I thought he must be somebody's big brother."

A knock sounded at the door. William walked over importantly and came in with a card in his hands, and a child at his heels.

"A new girl, Mis' Deane."

"Oh, yes. How delightful. What is your name, dear?"

"Aline. My mother's out there." She jerked her head toward the door. Miss Deane looked up. A young woman with a supercilious manner was standing in the doorway — with Edgar Weston, the new physical director. Remembering the train of her thoughts Miss Deane could feel her face growing warmer and warmer. He looked slightly self-conscious, too. How tall he was!

"Good morning! Won't you both come in? This is Aline's mother, of course."

Mr. Weston's gray eyes continued to disconcert her with their grave approval, but finally he spoke,

"Yes. Mrs. Weston wanted me to come to the room with her. Miss Deane, Mrs. Weston. I am sorry I can't stay awhile, but I am late for a class."

Miss Deane watched him leave, wide-eyed. Mrs. Weston! Why, he was married! How—how awful! She turned slowly. Her visitor was talking in a most maddening and patronizing tone of voice.

"You will find that Aline is a very bright child. Edgar seems to think she will get on well with you. I had some trouble in the other school. The teacher simply would not give her the marks I felt she deserved. I fixed that, though." She nodded a smartly dressed head with much satisfaction, and her red-lipped mouth tightened. "I saw the principal about it. Her marks were better afterwards."

Miss Deane sighed.

"Marjory, please show Aline where to hang her things. Won't you be seated, Mrs. Weston? We are just going to have a spelling lesson."

Mrs. Weston sat down and leaned back in the chair as if she were in the lobby of a fashionable hotel.

"And another thing, Miss Deane, we are trying to bring Aline up very carefully. Will you please see that she always minds in school. Aline's other teacher was excellent about things like that."

"The children must mind in school, Mrs. Weston." She might as well have saved her breath. Mrs. Weston was continuing with vigor: "It is so easy for a child to lose her manners in a schoolroom. I always insist that Aline should say, 'Yes, ma'am' and 'No, ma'am' at home. Do you insist upon it in school?"

By this time Miss Deane was angry.

"No, Mrs. Weston, I do not. They each use the name of the person addressed, however. You must pardon me. It is time for our spelling lesson."

She could feel Mrs. Weston's eyes surveying her up and down in a way that was far from mannerly, as she turned to the class.

"Open your spelling books to page 46. Why, where is your book, Norman?"

Norman squirmed, unhappily.

"Home."

Oh, dear! She'd surely notice that monosyllable.

"Where, Norman?" asked Miss Deane, significantly.

"Home."

"To whom are you talking, dear?"

By this time Norman, naturally shy and with a visitor to notice his disgrace, was almost under his desk.

"You!" he muttered, tearfully.

Miss Deane gave up, and handed him a book without daring to glance at Aline's mother.

The class spelled the twelve review words and then the three new ones.

"'Bald' is the first word," said Miss Deane. "We talked about the new words before we went home yesterday afternoon. I know you have fine sentences for me."

A dozen hands shot up. Antonio was waving his so franctically that she called on him before she had considered.

He stood straight and beaming, and shouted, "After the bald was over!"

"Oh, Antonio! That isn't right. Try again, and think of what we said yesterday."

Antonio looked a little crestfallen but brightened in a second.

"I got all bald up!" he announced triumphantly.

Miss Deane was almost in tears. What would Mrs. Weston think of her teaching! She probably knew it was her first year, too.

"Now, Antonio! I'll give you one more chance. I'm ashamed of you!" she said, firmly.

Antonio's black eyes grew mournful. He did not like to make the pretty teacher sad, and he had tried so hard. He thought with much depth of concentration, and rather hesitantly suggested, "My father bald me out?"

His rising inflection and tentative smile were too much for Miss Deane. She bit her lip to keep from becoming hysterical.

"No, dear. We'll have to help Antonio, children. He hasn't been in America very long, and it is hard to remember everything at first."

Antonio sat down looking sorry but grateful.

The reading lesson followed the spelling lesson and was not so bad. In fact Mrs. Weston seemed quite impressed.

Recess came at last. Miss Deane sent up a swift prayer that her visitor would leave, but she stayed on. If the new physical director had to be married, it was really terrible that he should have such wretched taste!

"Aline has always been delicate. . . . We shield her as much as possible from any contagion. Have you a school nurse?"

"An excellent one, but she sprained her ankle and will not be in today."

"It is so difficult to bring up a fastidious and delicate child in these days. . . ."

The children were returning from recess. Mrs. Weston was interrupted by a wide-eyed and obviously frightened little boy.

"What is it, Peter? You are being rude!"

"M-Miss Deane! — Tommy had this on his hands and now I got it."

He held out two small hands covered with tiny black specks.

"Oh!" screamed Mrs. Weston, recoiling, "Oh! Where is Aline?"

Peter, terrified, began to cry. Miss Deane drew him to one side. "Hush, dear. It is probably nothing. Do you feel sick?"

"I don't know," wailed Peter. "Do-do you think I will die?"

Mrs. Weston continued her frantic search for Aline; Peter would not be convinced in the face of such evidence that all was not lost; and to make matters worse, two more children came up breathlessly and cried together:

"We got it, too, Mis' Deane. We got it, too!"

Pandemonium reigned. Miss Deane turned to her visitor who was examining Aline with exclamations and lamentations.

"Mrs. Weston, I shall have to ask you to be still. You are frightening these poor children out of their wits."

"Why! I never heard of such a thing! Do you expect me to leave my child in a room where a highly infectious disease of some kind is spreading? And with a black rash, too! It might be anything."

"If you will *please* wait, Mrs. Weston, I shall find out what it is." Miss Deane grasped one of the loudly weeping trio and shook him.

"Hush! You are being very silly, Peter. The whole room is disturbed. Children! . . . . Sit in your seats, immediately! I'm going to give a gold star on the blackboard to the row that is busy first."

The children were diverted, but not Mrs. Weston.

"This is a dreadful thing, Miss Deane," she whispered, loudly. "I hope you realize the responsibility you are incurring by keeping these infected children in school."

What should she do! If only the school nurse were available! Suddenly she heard a quiet masculine voice say, "Your class didn't arrive for gymnastics at the hour I have scheduled. I wonder if my schedule corresponds with yours, Miss Deane."

She turned, eagerly. "Oh, Mr. Weston! What do you suppose this could be? Should I send them home?" He looked at the six black-pocked hands frowningly, and then he grinned, a delightful, reassuring, amused grin.

"Um-m-m. Even on their faces. May I take these patients for a few minutes? I think I can cure this epidemic."

Everybody sighed a deep sigh of relief, and Miss Deane's eyes blessed him lingeringly as he left the room.

"Edgar is so dependable!" exclaimed Mrs. Weston.

"Yes, I imagine he is," said Miss Deane, more sadly than such a remark warranted.

They were back in about five minutes. The children came in laughing, and held out hands of impeccable whiteness.

"Look, Miss Deane!" She lifted an inquiring eyebrow toward Mr. Weston.

"I noticed the tar sprinkler in the road," he said, dryly. "They were watching it at recess, and didn't notice what was happening to them. Their overcoats must be dotted, too."

"What a relief!" exclaimed Mrs. Weston, rising. "Well, I must be going."

She left. Mr. Weston glanced around and noticed Aline.

"So you're here! Do you think you'll work hard for Miss Deane?"

Aline nodded, happily. "Yes," she said.

"Yes, who?" reminded Miss Deane, conscientiously.

"Yes, Uncle Edgar."

It really was a beautiful March day!

The Relation of the Board of Education to the Staff*

Willard S. Ford, University of Southern California

The Board and the Professional Administration of Education

The control of education in the United States was transferred from the religious and private agencies to public control during the first half of the nineteenth century. During this period, two agencies evolved, which together control the policy and the administration of the public schools. These agencies are the board of education, elected by the people directly or indirectly; and the superintendent of schools, in most instances appointed by the board. These two agencies are not competing for the control of the schools, but are complementary and coordinate in educational administration.

The board of education, as the representative of the people, is responsible to the body politic for the proper administration of the schools. It is, however, a lay body, usually serving without compensation, whose chief functions are to determine policies, and receive reports which account for the administration of the board policies. Its duties are, therefore, largely legislative. The responsibility for the actual conduct of the school organization is placed upon the superintendent of schools as the chief executive and agent of education and the professional leader of the school system.

To the superintendent are delegated the legislative powers and responsibilities by the board. This delegation of authority, however, in no sense relieves the board of education of its responsibility. In order that the members may fulfill their duty to the public, it is essential that they be continually informed regarding the details of administration and the performance of obligations delegated to the staff. In consideration of this responsibility of the board of education to the community, I desire to raise four questions.

1. What should the board of education expect of the superintendent of schools?
2. How may the board-of-education legislature function as an administrative control?
3. How may the professional staff be organized to administer the educational policies?
4. Are business administration and educational administration coordinated?

What Should the Board Expect of the Superintendent of Schools

Educational leadership is the first duty of the superintendent. Cubberley[1] says that the superintendent of schools has a threefold responsibility: First, as an organizer; second, as an executive; third, as a supervisor.

Theisen[2] says that the selection of the superintendent of schools is the most important responsibility of the board of education. An essential criterion for the selection of an executive is that he be an educational leader. The development of the educational program in the community is limited by his educational vision. The program may fail to reach his ideal, but it cannot exceed it.

The educational leadership will consist of a number of factors. Changes and improvements in the educational program will always be initiated through his office. The board of education of Menominee, Michigan, in recognition of this responsibility, pays the expenses of its superintendent to some outstanding school system each year, for a period of two weeks for an intensive study of the particular organization or the new type of work which has been developed in that community. This enables the

*This paper formed one of the features at the important Conference on School Trustees' Problems held at the University of Southern California, June 6 and 7, 1929. The Conference was under the direction of Dr. Osman R. Hull, Professor of Educational Administration.

[1]Cubberley, E. P. Public School Administration, p. 142.

[2]Theisen, W. W. The City Superintendent and the Board of Education, p. 30.

The board of education, as the representative of the people, is responsible to the people for the proper administration of the schools. In its relations with the staff, the board must rely on the superintendent and his staff for the collection of facts regarding any important work, but it is the duty of the board to pass the final judgment. The present article discusses the methods of control by the board and the various types of administrative organization. It is brought out that the organization must center the responsibility for the control of the schools in the superintendent, in order to fix the definite responsibility for each activity and to prevent confusion and overlapping of authority.

community to realize the development of its educational program in the growth of the educational leadership of its superintendent.

The superintendent must be a leader in personnel management. There are a number of ways in which he must be a leader of his teaching staff. An evidence of leadership is his success in discovering the special abilities of his staff and making use of them. A teacher may be an enthusiastic leader of student activities, but the benefit of this ability is not realized until it is discovered by the superior officer and given an opportunity to function. To place each member of the staff in the position where he can render the largest service requires tact, judgment, and keen insight. No superintendent can run the school single-handed. He must be willing and able to delegate responsibility, with authority to the members of the staff. He must give to each the maximum of responsibility that he is able to carry successfully. In order to determine what that maximum is, he must have methods of continually checking the effectiveness of their performance, and make the necessary adjustments in the measure of the responsibility.

The Center of Staff Inspiration

The superintendent must be the center of inspiration for his staff. He must fix a definite goal of achievement for each of his immediate staff, and he must continually renew these goals as they are individually achieved. For some the goal will be immediate and small; for others it will be remote and extensive.

Further, he must be able to inspire and retain the loyalty of the staff by the recognition of their achievements, and by giving to each due credit for work which has been accomplished. Any superintendent who tries to take all the credit for the work of the schools either attempts to appropriate credit which is not due to him personally, or there is very little credit to be given. Greatness in administration consists not in doing so many things, but in getting others to do many things well.

The educational leadership of the superintendent should be apparent in the organization of the staff. The development of proper relationships, with a clear statement of the function and duties of each office, makes possible an organization which will work smoothly and effectively. The number of people needed to carry each responsibility requires a balancing of the work load in the staff organization. The coordination of these responsibilities to produce efficient results is a part of the responsibility of organization.

Finally, the superintendent of schools must be the educational leader of the community. The progressive educational ideas of the superintendent and the board must not lead the public opinion of the community by too large a distance, if it is to retain the confidence of the community and be permitted to serve the community effectively. The public must be informed of the work of the schools, its purpose, and its achievements.

Accounting for the Schools' Work

No responsibility for administration can be delegated successfully, without machinery for reporting the effectiveness of the service. It is common business practice for anyone who has the responsibility for the handling of funds for others to have an audit of the accounts by a certified public accountant. The purpose of this audit is not only to protect the interests of the owners, but to protect the reputation and good character of the agent. The same two purposes apply in the accounting for the administration of education. The state legislature for the State of California has set up an adequate machinery to protect the use of the school monies. Accounts are kept by the board of education, by the county organization, and are audited by the grand jury. This accounting is essential, although it seems that the machinery might well be simplified. The accounting required by the state does not provide an adequate financial accounting. There must be a detailed cost accounting for efficient administration. The expenditures for education must be carefully analyzed, so that it may become a basis for future control. The comparative cost per pupil in average daily attendance for the various schools should be presented. The relative costs for each of the general functions of expenditure should be determined. The board has a right to know how the cost for general control per pupil in the local school system compares with that of other systems. The public may fairly ask for the complete costs for the teachers' salaries per pupil. It is important to know how much has been spent per pupil for supplies. The financial accounting must be detailed, if it is to give evidence of efficient administration.

Pupil Accounting Most Important

The work of the schools, however, is not measured by a profit or less that can be expressed in dollars and cents. The product of the school can only be measured by the growth and development of the students. Pupil accounting and educational accounting are of at least equal importance to financial accounting. Modern devices enable us to give a more accurate accounting of the product of education than was formerly possible. Standardized educational and intelligence tests enable us to measure the growth and development of the pupils in comparison with the students in other comparable systems throughout the country. The achievements of the students during the school year are evidence of successful administration. This achievement may be the construction of a desk or table, the writing of a poem or short story, the winning of an oratorical contest, the achievement of athletic skills, or the production of a dramatic presentation. The board of education and the public have a right to know what has been accomplished during the fiscal period in terms of the best measures of the educational achievement which are available.

There are many phases of accounting which a superintendent may make. He should make an accounting of teacher growth and development; of pupil progress; of the per cent of children of school age who have been in school during the year; of the per cent of days attended during the year; of the care and use of the school plant; of the development and extension of the school property. Each new policy of the board of education is a matter which may be accounted for in the reports.

The Superintendent as Source of Information

The superintendent must, as an important part of his work, furnish the board with the

essential information on the schools. No one can do more than guess the desirable policies and activities, except as they are provided with facts as a basis for intelligent judgment. The more complete and pertinent the facts, the better will be the judgment. It is the responsibility of the board to pass final judgment, but it has not the time to collect the facts which form the basis for judgment. This responsibility must lie with the superintendent and his staff.

Before the superintendent should propose any change of administration, he must carefully collect, assemble, and analyze the facts regarding the change. What school systems have adopted this program? What will be the cost of the new system? What are the educational advantages? How will it affect the present organization? are questions which will guide in the collection of information. We appreciate that in a large school system, the superintendent will be unable to collect these facts singlehanded. He will need a research department to continuously gather these facts, but the direction of the work of this department must be determined by the superintendent. It is axiomatic that the money spent for intelligent administration is money saved.

Methods of Control by the Board of Education

If the responsibilities for the administration are to rest upon the superintendent of schools, by what means may the board of education exercise the control and authority given them by the state legislature and the voters of the district? Five methods of control by the board will be here discussed.

The board of education is the legislator for the school district. Its acts are law so long as they do not conflict with the laws of the superior legislative units The minute book is the record of this legislation and the law book of the schools. If the minute book is only a chronological record of the board's action, it will be an ineffective administrative control, but if it is properly organized and intelligently used, it becomes the final authority for local school activities. Engelhardt and Engelhardt[3] have this to say of the minute book: "The legislative work of the board of education is of such vital importance that accurate records should be maintainad. The minute book of the board thus assumes an important place which gives it first place among all the records kept in the school system."

To be properly organized, the minute book must show not only the action taken at every successive meeting, but these actions must be classified and indexed to enable the board and the administration to find all the actions which have been taken on any particular subject, and to determine the final and controlling action of the board. It is not an infrequent experience in reading the minutes of a board of education to find the same matter discussed time after time and actions taken which may reverse the decision and change the policy, so that it is almost impossible to administer it. To be intelligent in the adoption of new policies in respect to old subjects, the board should have available, all actions which have been previously taken on the subject. For this purpose, it is desirable to have an organization of board legislation according to subjects. Whenever a new action is taken on a given subject, this action should be added to those already taken on that subject. The index of a minute book for a board of education, presented by Engelhardt and Engelhardt,[4] contains over six hundred items.

Supplementary Control Methods

While the minute book is the chief source of board control, there are several supplementary methods which are related to the minute book itself. It is common practice for the board of education to have their actions

[3]Engelhardt and Engelhardt, Public School Administration, p. 133.
[4]Op. Cit., p. 137.

WILLARD S. FORD, Ph.D.,
Professor of Education, University of Southern California, Los Angeles, California.

organized into a set of rules and regulations for the conduct of the schools.

E. W. Anderson reports, in his "Teachers' Contracts and Other Legal Phases of Teacher Status," that forty per cent of the boards of education issue some type of rules and regulations. This agrees closely with a previous study by Mr. M. G. Neale. The larger the city, the more likely it will be to have a set of rules and regulations. This is to be expected since the *larger organizations* make personal contact increasingly difficult and written regulations are consequently substituted.

A large variety of subjects are included in the regulations of school boards.[5] The five items which Anderson lists as appearing most frequently are as follows:

1. Routine duties of the teacher in the classroom or about the building.
2. Duties outside of school hours, such as attendance at teachers' meetings, institutes, self-advancement, college courses, and community activities.
3. Absence of teachers—pay for.
4. Cooperation with central office. Reports properly made, notice of absence and resignation.
5. Salaries and salary schedule.

Such rules and regulations are a valuable asset if they are properly organized, as they are an available and authentic source which staff members may consult to determine the policies of the board.

Clearness and definiteness of regulations must be provided, if misunderstanding is to be avoided. Engelhardt and Engelhardt[6] give the following principles for the preparation of rules and regulations:

The Bases of School Rules

1. Rules should be consistent with law.
2. Rules should in reality be guiding principles rather than collections of detailed instructions.
3. Rules should reflect board policies and should not indicate administrative procedure.
4. Rules and regulations should be framed by the executive and the professional staff of the school system and approved by the directing board.
5. Rules should not restrict or kill initiative, but they should define the range of duties and responsibilities of individuals and groups of individuals within the system.
6. Rules should recognize the professional character of the workers in a school system, and should be developed on the assumption that professional attitudes toward work and a professional code of ethics will be guides and stimuli of the professional staff.
7. Rules and regulations must be a part of the minutes' record of the board, and should not be modified, except with the consent of the board of education.

Written Instructions

The third method of control by the board of education is through written instructions to the staff. These instructions will be in minute detail and will probably be prepared by the superintendent's staff and approved by the board.

The following is an illustration of such a written instruction for building custodians:

"Maintaining kindergarten floors. When playing games, the kindergarten children often sit on the floor. For this reason the floor must be so clean that the children's clothes will not become soiled. This floor is maintained entirely with a treated sweeping mop, which is kept for use in the kindergarten only, and experience has shown that it can be made one of the most beautiful floors in the building, both in appearance and in cleanliness. The floor is swept daily. Where there are two half-day sessions in the same room, it is well to go over this floor twice a day."[7]

The more complete and definite the directions given to the members of the staff, the more easily the quality of their work may be judged.

One of the most frequent methods by which the board of education controls the activities of the staff is by means of the teachers' contract. Forms of contracts vary greatly. Anderson[8] finds that the following purposes are made of the contract by different boards of education:

The Fundamentals of Teachers' Contracts

1. To secure a definite written statement of agreement that the teacher is to teach in the system for the succeeding year.
2. To clarify certain routine requirements of the teacher.
3. To inform the teacher as to rules and regulations regarding such things as payments for absence, extracurricular duties, self-improvement, resignation, and salary schedules.
4. To exhort and advise the teacher as to conduct outside of school.
5. To gain certain legal rights that can usually only be gained by the board contractually, such as the right to terminate upon a definite notice, or to terminate upon marriage of the teacher.
6. To impress the teacher with the sanctity of the contract through the use of seals and legalistic verbiage, and to remind him of his moral and ethical responsibilities through statements of what the board expects and of what the teacher agrees to do.
7. To gain certain information concerning the teacher, such as address, telephone number, date and place of birth, training and experience.
8. To instruct the teacher concerning the provisions of the state law.

The Budget as a Control

Probably the most effective single agency for the control of administration is through the annual school budget. If this is properly prepared, it represents the educational program for the coming fiscal period, and should reflect all of the educational policies adopted by the board. For example, the budget for teachers' salaries will be determined on the salary schedule which is the salary policy adopted by the board. The inclusion in the items of equipment of gymnasium suits reflects the policy of the board with regard to furnishing such equipment to the students. Since every activity has a financial aspect, *the consideration and adoption of the annual budget is probably the most important single action of the board, next to the selection of its chief executive.* The report of the superintendent which shows the comparison of expenditures with budget apportionment, informs the board as to the effectiveness of this method of control.

Types of Administrative Organization

Many types of school organization are found in the United States. They are chiefly of four or five standard types:

[5]Anderson, E. W., Teacher's Contract and Other Legal Phases of Teacher Status, p. 63.
[6]Engelhardt and Engelhardt, op. cit., pp. 151, 152.
[7]Womrath, G. F., Rules and Regulations for Janitorial-Engineering Service, Minneapolis Schools, pp. 43–46.
[8]Anderson, op. cit., p. 57.

1. *Line or Military Organization.* The most simple and the oldest organization is the line organization under which each one is directly responsible to the one above him. This has the advantage of fixing responsibility.

2. *Line and Staff Organization.* A modification of the line organization is the line and staff. To the line organization we have added certain individuals who are not in the direct line of authority, but who are directly responsible to some member of the line, and have only an advisory function. Supervision in the school organization will ordinarily be of this type. Research departments are ordinarily considered to have a staff function. This raises the important issue of the relation of these staff officers to the principal of the schools and the teachers.

It is the usual regulation that the principal is the head of the school and that no changes may be made in the school organization without his knowledge and consent.

3. *Functional Organization.* Following the example of some of the industrial organizations, some schools have been organized in terms of their function. Assistants under the superintendent of schools are given responsibility for certain activities, and they have the direction of that act when it occurs in the school. This has the advantage of unifying the organization of all such functions, but it has the disadvantage of increasing the complexity of control, and the difficulty of fixing responsibility.

There is a growing tendency in American education to have these functions under the charge of committees. This makes the administration more democratic. It has a tendency, however, to diffuse responsibility, and to complicate and delay the results.

4. *Combination Organization.* Few schools have any single method of organization. There is usually a combination of line, staff, and functional organization. So long as the duties and responsibilities of each one in the organization are definitely outlined, the organization may work effectively.

Principles of Organization

There are four principles of good organization which should be observed:

1. The organization should make it possible to definitely fix the responsibility for every activity.

2. There should be a definite statement of the responsibilities of each position in the organization, in order that no necessary work may be neglected, and that individuals may know to whom they are responsible.

3. Duplication of authority should be avoided. No one can serve two masters when they give contradictory orders.

4. The organization should be adjustable to utilize special abilities. Any member of the staff who shows an aptitude for a particular line of work should not be prevented by a fixed organization from the exercise of this special ability.

The Unit Versus the Multiple Control

There is a tendency in some parts of the country for boards of education to set up the business administration as a separate unit, independent of the superintendent of schools. No doubt this has been due to the fact that in the past, superintendents have not had business training, and it was assumed that his responsibility was for the educational program.

Those who have separated this schoolwork have made a number of claims in support of the plan. The most frequent is that due to business experience of the business manager, which makes it possible for the schools to be run more efficiently and more economically. A second argument has been that the division of responsibility according to function is good business. A third argument in favor of separate business management is that it sets up a system of checks and balances, which results in more economical and more efficient administration.

An investigation was made in 1925 by Dr. H. P. Smith, of 97 school systems to determine the results of unit and dual control. Fifty-two of these were of the unit type, that is, with business control under the superintendent; and 45 were of the multiple type, with the business manager directly responsible to the board of education. As a result of the careful analysis of these organizations, and the cost of the educational program, Dr. Smith[9] reaches the following conclusions:

Conclusions of a Study of Separate Control

1. A study of school costs (for 97 cities—52 of the unit type, and 45 of the multiple type—constituting a representative sample of the larger cities of the country) shows no striking differences between the "raw" averages, either for total current expense or for the functional divisions of current expense.

2. On the basis both of the "raw" averages and of the statistical treatment of these averages, but one conclusion is justified—that the type of the administrative organization does not materially affect the cost of education in the larger cities.

3. The administrative and personal relationships not easily subject to objective study constitute a vital aspect of the functioning of school administration in multiple-type cities.

4. The administrative set-up in multiple-type cities is fundamentally weak, since it fails to center the administrative responsibility in one executive, and permits points of view other than educational to determine policies and to dominate activities.

[9]Smith, H. P., The Business Administration of a City School System.

5. The harmonious relationships characteristic of school administration in many multiple-type cities is due primarily to the personnel in the executive positions rather than to the administrative set-up.

6. The solution is a single executive officer in whom responsibility is centered, and whose point of view is primarily educational.

It is evident from the facts in the case that the arguments in favor of separate control are not supported by the actual experience. This also bears out the fact that violation of the general principle of centralization of responsibility in one individual is shown to decrease the effectiveness of the organization. Since every educational activity has a financial correlary, the educational leader must either control the business management, or the business management will control the educational program.

Summary

The board of education, although it carries the major responsibility to the community for the administration of the schools, may safely delegate this authority to the superintendent of schools and his staff, provided they demand and receive a proper accounting for the administration of the schools. There are adequate methods by which the board may control the administration of the schools. The minute book, the rules and regulations, the teachers' contracts, written instructions, and finally the adoption of the budget, are the effective means of fulfilling their responsibility.

The type of administrative organization is an important factor. This organization must center the responsibility for the control of the schools in the superintendent. It must fix the responsibility for every school activity and it must prevent overlapping and confusion of authority.

Why Some School-Board Members Refuse Reelection

A number of instances developed recently where high-class members of boards of education have declined a reelection or reappointment. The reasons urged as they have appeared in the public press, were in the main to the effect that they were tired of being harassed by a lot of vexatious matters pertaining to the school system.

As a rule, the complaints arise out of the fact that members are constantly importuned for position and promotion by teachers and their friends, by salesmen who had something to sell to the school system, and by well-meaning meddlers who wanted to improve the school system. They seek out the members at their homes, offices, and workshops, in order to submit their suggestions, grievances, or projects.

Where this situation prevails it also follows that a wrong interpretation as to the scope and function of a board-of-education member is observed. To assume that the individual member must concern himself personally with every detail of school management is erroneous. The board of education is analagous of the board of directors of a commercial or industrial corporation. The power to approve or disapprove is lodged in such a board, but the administrative detail is delegated to regularly appointed persons or established agencies. Likewise, in a well-ordered school system a board of education delegates authority to executives and holds them responsible for results.

The board member must necessarily have certain contacts in order to know the public mind, and to be informed, from the outside as well as the inside, as to what is happening in the school system. But he cannot be expected to determine upon the efficiency of this or that teacher, upon the merits of this or that textbook, or upon the composition of a course of studies. In their nature these duties are professional in character and come within the province of those employed to perform them for the school system.

The member of a board of education who desires to rid himself of tiresome and superfluous detail and to get away from vexatious situations has a simple course of procedure before him. Primarily, he must assume that all professional matters pertaining to teachers, textbooks, and the like, must come to him at the regular board or committee meetings through the accredited executive, namely, the superintendent of schools or his assistants. Further, that matters of a purely business nature must go to the secretary or business manager of the board of education and come to him through this official. This does not imply that the member of a board of education should become an exclusive personage who cannot be seen by those who have legitimate claims upon his time and attention. It does mean, however, that he may rid himself of a mass of trivial and superfluous things which belong to those employed to attend to them, and to apply himself to the things which come legitimately within his province.

The time of the member of the board of education is well employed in determining upon policies, projects, and departures as they come before him at committee and board meetings. He serves in a legislative and judicial capacity rather than administrative or executive. This is in accordance with the best conceptions on school administrative practice and procedure.

A Problem in the Training and Selection of the Superintendent of Schools

Ernest O. Melby, Northwestern University

Considerable attention has been given in recent years to the problems of the training of city superintendents of schools. Specialized training has not only been advocated for superintendents, but also for principals and teachers. It has further been shown that more superintendents have been recruited from high-school principalships than from all other groups combined.[1] During an investigation of supervisory organization, certain data were collected concerning the training and experience of superintendents in cities of 10,000 to 20,000 population.[2] As can be seen from Table I, the present study shows a larger proportion of superintendents who secured their positions from high-school principalships than was revealed by the study made by Douglass.[3] The fact that nearly 70 per cent of these superintendents came to the superintendency from a high-school principalship suggested the significance of further study of the experience of these superintendents.

It was found that 57 per cent of the superintendents who came from high-school principalships were promoted within the local school system. Evidently, a high-school principal's chance of becoming superintendent in his own community is somewhat better than his chance of becoming superintendent in some other city.

TABLE I

Showing Positions from which 120 Superintendents Secured Superintendencies

Position	Per Cent	
	1928	Douglass (1923)
High-school principalship	69	61.94
Began as superintendent..	17	3.98
Elementary principalship	2	20.98
Assistant superintendency	3	0.
State superintendency.....	1	1.46
State agent	1	0.
County superintendency..	2	0.
Normal-school teaching....	3	3.42
Supervisor	2	0.
Teacher	0	7.21

The small percentage of men who began their work as superintendents in small towns and reached their positions by promotion from one superintendency to another is striking. An attempt was made to determine whether this number is increasing or decreasing. In Table II, those administrators who began as superintendents have been distributed according to years of experience. Not one of them has less then 15 years of experience in educational work. This means that in these 120 cities there is not one superintendent who in the past 15 years has been appointed from a beginning superintendent in a small town to his present position in a city of from 10,000 to 20,000 population.

Of those who secured their positions from high-school principalships there are 21 who were at one time superintendents in small towns. They then left such small-town superintendencies to become high-school principals in a somewhat larger city, later to be promoted to superintendencies either in their own city or in another. It may be that these superintendents felt that their chance of securing a good-size superintendency by promotion from small towns to larger cities was small. In any case, this group of superintendents chose the course which experience has shown is most effective in securing a superintendency.

[1]B. C. Douglass, The Professional and Economic Status of the Superintendent of Schools in the United States, p 36.

[2]E. O. Melby, The Organization and Administration of Supervision in Cities Having a Population of 10,000 to 20,000. Unpublished manuscript, University of Minnesota Library.

[3]B. C. Douglass, The Professional and Economic Status of the Superintendent of Schools in the United States.

While the data in Table III are difficult to interpret, they indicate at least that promotions of high-school principals to superintendencies are continuing. No other single position except the high-school principalship seems to be of great importance as a stepping-stone to a superintendency in cities of the size here included. Douglass reports 21.98 per cent of superintendents who secured their positions from elementary-school principalships and only 3.9 per cent who began as superintendents. It is likely that the reversal of the percentages in the present study is due, not to a change in conditions, but to differences in interpretation of the categories. The elementary principalships may include numbers of small-town superintendencies which are little more than elementary-school principalships.

TABLE II

Distribution of 21 Superintendents Who Began Their Educational Work as Superintendents

(According to Years of Total Experience)

Years of Experience	Number
1 to 15	0
15 to 20	3
20 to 25	3
25 to 30	6
30 to 35	6
35 to 40	3
Total	21

TABLE III

Distribution of 82 Superintendents Reaching Their Positions from High-School Principalships

(According to the Recency of Their Promotions from High-School Principalships)

Time of Promotion	Per Cent
1 year ago	2.9
2 years ago	7.2
3 years ago	4.4
4 years ago	4.4
5 to 10 years ago	33.3
10 to 15 years ago	20.2
15 to 20 years ago	7.3
20 to 25 years ago	13.0
25 to 30 years ago	4.4
No data	2.9

At least, in terms of the experience of the men who now hold these larger superintendencies, *the* way to such a position is through the high-school principalship. Unless the situation is altered, the young man who begins as a superintendent of schools in a town of 500 people and hopes gradually to be promoted to a superintendency in a city of 10,000 to 20,000 population, is taking a course in which the chances are against him. If the present practice is continued, will it encourage young men to enter or remain in small-town superintendencies? Even if men are encouraged to enter high-school principalships, their interest in the principalship may be largely in terms of its strategic importance in securing a superintendency.

From a training standpoint this would indicate a difficult problem. Shall specialized training for superintendents be provided when those who take this training must for years be high-school principals before becoming superintendents? If, on the other hand, these men are given specific training for secondary-school principalships, will such training be adequate for a superintendency when such a position is reached? The superintendent in a city of the size here included, will be called upon to direct a rather complex supervisory organization functioning in the elementary schools. The typical superintendent, however, brings to his position a background of training and experience largely in the field of secondary education. Of the high-school principals now serving in these cities, more than 70 per cent have never taught or supervised in the elementary schools. If these principals become superintendents, will they have adequate training and preparation for the problems they will meet?

If a series of superintendencies gradually increasing in size supply better training for the superintendent of schools than high-school principalships, that fact is not recognized by boards of education in their present employment practices. It may be that the high-school principal already in the system is in a strategic position to secure the superintendency when a vacancy occurs. This, however, would hardly seem to be true in the case of principals from other cities. It would seem that study should be given, not only by superintendents and training institutions but also by boards of education, to the problem of the best types of training and experience as preparation for the most effective work in the city superintendency.

The Hard-of-Hearing Child

Henry S. Curtis, Ph.D., Jefferson, Missouri

Reports of the American Federation of Organizations of The Hard-of-Hearing, which has devoted two years to the study of this problem in different school systems, indicate from 12 to 15 per cent of the school children in the United States need attention to their ears. About half of these children have been left back in their schoolwork, one or more times, largely on account of this defect.

Many of these children require immediate medical attention. Some of them have running ears, or ear passages stopped with wax, while many have the eustachian tubes closed.

There are several methods used in testing the ears. The old method was to measure the distance at which a watch tick could be heard. This is influenced by suggestion and is as much a test of truthfulness as hearing. It is not as accurate as the whisper test in the hands of a skilled examiner, and is much less reliable than the audiometer tests. The audiometer is a victrola with special records and ear phones which may be adjusted, first to one ear and then to the other. The child writes down what he hears. A whole classroom may be accurately tested in a few minutes.

Whenever a child is found with defective hearing, word should be sent at once to the parents and to the teacher. Parents should be advised to refer the case to a specialist, if possible, and the teacher should be advised to seat the child in the front of the room where he will be able to hear.

In a number of cities there are now special teachers of lip reading who go from school to school. In some, special classes have been formed for longer or shorter periods in which these "hard-of-hearing" children have been segregated and taught.

Lip reading for those who still have a certain percentage of hearing is a much simpler and shorter process than it is for those who do not hear at all. In a comparatively short time these children are able to go back into their regular classes and understand the work given.

Playground Surfacing

Raymond R. Hutchings, Santa Barbara, California

The subject of surfacing playgrounds raises many questions connected with playground management. What uses will be made of the grounds? Are they large enough to accommodate such games as regulation baseball, soccer, and football? Are they so small that only games requiring small amounts of space as playground baseball, volley ball, handball and the usual playground apparatus can be accommodated? What ages of children and young people are to be considered in laying out the grounds? What other play space is in the same vicinity and available for play periods? All of these points must be considered in determining what part, if any, of the ground should be surfaced and how it should be done.

Small areas much used and spaces for tennis, basketball, handball, etc., require a hard, smooth surface. Areas for swings, teeters, rings, etc., may not need to be surfaced at all. Baseball, soccer, and football fields may be sown to grass.

The nature of the soil and the drainage it affords, have much to do with the selection of surfacing materials. Good drainage is imperative and must be provided by use of a cinder, gravel, or some other porous base and the use of drains, if there is not a good natural drainage. Adobe soils will need drainage; sandy loams may not. Drainage should be to the edges of the field or play areas.

The materials available at the time of use and their relative cost will be an important factor in selection. Again, the amount of money that can be expended on each particular playground will help determine the materials used.

Characteristics of a Good Surface

A playground surface must be porous enough to drain well, firm enough to stand up under constant use while wet or immediately after rains, and not be dusty when dry. To get all of these qualities in one surface becomes a difficult problem.

Daniel H. Barr, superintendent of buildings of the Harrisburg, Pa., school district,[1] states there are three main factors in selecting surfacing material that will prove satisfactory to those who use and those who pay for it. These are: application, cleanliness, and maintenance. Under the first heading there is the expense of the surfacing material, the expense of laying it on a proper base, and the amount of time that is consumed before it is ready for use.

Cleanliness is important if oils of any nature are to be considered. Since they soil the clothing so easily, many cities do not use them at all. Several cities that do use them have quantities of sand to cover the oil as it comes to the surface. A surface should be free of dust and mud at all times to be satisfactory.

Maintenance becomes a larger factor each year as surfaces grow older and more playgrounds are established. A surface that can be repaired easily and cheaply, or one that will give long years of service, is more economical than others.

Other factors in selecting a surfacing material are: the kind of soil, materials available, climate, and topography. The nature of the soil and subsoil is important. A heavy adobe soil requires more careful treatment and a heavier surfacing than a sandy loam or clay. If the subsoil does not permit drainage easily, it may be necessary to remove some of it and use cinders or gravel to carry away the water. The kinds of material that can be obtained economically vary with the localities. Limestone screenings, cinders, gravel, sand, decomposed granite, oil products, and asphalt are some of the materials that can be used. Some of these are found in every community.

The climate will determine whether certain materials can be used. If much rain falls, sandy clay may not prove satisfactory; if there is much hot weather, asphalt will become too soft and cannot be used satisfactorily.

The topography of the playground is an important feature. Too much slope will require grading or a hard surface to prevent washing; no slope will require a carefully planned drainage system to protect the surfacing.

Saving School Floors

The surfacing of school playgrounds introduces the problem of maintenance of the schoolroom floors. A gritty surfacing, such as gravel or screenings that will stick to the soles of the children's shoes, when wet or oily, will wear the floors or floor covering very rapidly. If the children walk some distance from the play area to the schoolroom door, they may free their feet of this material before entering the building; therefore, it is best not to use such material near the school building. Again, if clay surfaces are near the building, the dirt packed in during wet seasons adds much to the labor of cleaning and increases the danger of disease due to the great amount of dust that results. A hard, smooth surface in much used areas on the school playgrounds will give the best results.

Every community, in fact every playground, presents its own problems which must be solved if the maximum benefit is to be obtained by the people using it. The questions mentioned above must be answered with the local conditions in mind. The experiences of others in meeting somewhat similar problems will afford some guidance in reaching a solution. It is the aim of this paper to present questions and experiences that will be an aid in finding the answers.

How Detroit Surfaces Playgrounds

"Detroit has found that a surfacing of limestone screenings and calcium chloride has proved very satisfactory. It is porous, drains easily, and can be used immediately after a rain. It does not develop soft spots. It is soft after a thaw, yet packs down readily after the frost is out of the ground. This surfacing has a foundation of four inches of hard cinders, wet down and rolled with a steam roller. (Cinders must be kept wet while rolling.) Next, three inches of limestone screenings is applied. This also is wet down and rolled to a true grade with a horse-drawn roller. Calcium chloride is applied at 1½ pounds per square yard. Then, ⅛ inch of a sharp torpedo sand is put on. The calcium chloride absorbs moisture from the air, and forms a binder coat with the sand and limestone screenings, giving a smooth, white, dustless finish to the playground."[2]

Minneapolis Practice

"An official of the Minneapolis park department says, concerning playground surfacing on the Minneapolis playgrounds: "We have tried cinders, gravel, sand, limestone screenings and other substances on playground surfaces, but nothing seems to be better than a regular loam surface. Six inches of clay are placed on the subgrade, upon which is placed six inches of loam. This is then seeded and rolled."[3]

The Philadelphia Method

"The playgrounds of the bureau of recreation in Philadelphia are surfaced as follows: The entire plot (with such exceptions as may be required in each particular case) is to be graded to a subgrade of ten inches below the finished grade as shown on the plans. This surface so made is to be carefully, though not accurately, leveled, and is then to be compacted by rolling with a steam roller of not less than five tons in weight. All soil or waste material resulting from this grading to be taken away and disposed of. Spread over this surface sufficient hard-coal cinders so that after rolling with a steam roller of not less than five tons in weight there will be a thickness of seven inches. The cinders must be thoroughly wet before and during rolling. The rolling may be done in one layer. Then place on top of the cinders a sufficient depth of stone screenings so that after rolling with a steam roller of not less than five tons in weight, and bringing the surface to the grades given by the surveyor, there will be a thickness of not less than three inches of the stone screenings. The stone screenings must be thoroughly wet before and during the rolling. The rolling may be done in one layer. During the summer months and dry season, this surface is to be sprinkled with water sufficient to thoroughly wet the whole area as often as may seem necessary to allay the dust."[3]

Harrisburg Practice

Harrisburg, Pa., selected kyrock, a rock asphalt material, for surfacing. It could be laid cold, utilizing the existing base. It could be laid at a minimum expense without cost of special equipment or asphalt experts, entailing only the preparation of the base, the hauling of the material to the job, raking to grade and rolling. In the author's words: "We have utilized the old bases, in all cases grading them first. Three or four inches of good engine cinders were added and wetted down and then rolled until hard and firm. After allowing this to dry thoroughly, 1½ inches of loose surfacing material was spread and raked—then rolled with a seven-ton tandem roller. A thin seal coat of sifted material was then spread to fill any possible honeycombs or depressions and this was then rolled with a 400 pound roller. Around trees, posts, etc., where it was not possible to work closely with a roller, the surface was hand-tamped, which was sufficient for proper bond of the material. Our school yards and playgrounds are now clean, smooth, resilient, and wearproof. The material is slightly darker than ordinary asphalt, nonglaring and easy on the eyes under the sunlight, and it has a fine sandpaperlike surface that offers ideal traction for the feet in play and sports. The surface is dustless, that is, it does not scuff up under the feet in dry weather. It does not smut the clothes and is free from mud in rainy weather.[1]

Richmond Uses an Oil Surface

Richmond, Va., reports that: "During 1925 four carloads of Texas oil surfacing material were applied to a number of the playgrounds in various parts of the city. In 1926 two more carloads were used, giving in some instances a second treatment to areas first treated in 1925. The areas treated at the schools vary in size from small corners to several thousand square yards."

The method of application is briefly described as follows: The area treated was leveled and smoothed with a scarifier and blade grader; it was then rolled firm with a 5-ton roller; when thoroughly compacted and dried, it was swept clean and free from dust. The asphaltic surfacing material was then applied cold at a rate of approximately ½ gallon per square yard. The whole was then covered with coarse, clean, sharp sand such as is used in concrete construction, in quantity sufficient to just hide the asphalt. It was then re-rolled lightly."

Because of some trouble experienced by the sticky material adhering to the feet of the children at the start of school, it was necessary to use an excess of sand over that actually required to combine with the asphalt. Some extra attention during the hot early fall days was required to keep sticky spots covered with sand. After the

[1] Factors Affecting Successful Surfacing of Playgrounds and Drives. Daniel H. Barr, in American City Magazine, March, 1928, Vol. 38, p. 139.

[2] Landscaping, Fencing and Surfacing of Playgrounds, from Report of the Playground and Recreation Committee of the American Institute of Park Executives. American City Magazine, Vol. 31, pp. 557–8, Dec., 1924.

[3] Play Areas—Their Design and Equipment. Prepared by the Playground and Recreation Association of America. A. S. Barnes and Co. pp. 98–99. 1928.

sand is thoroughly absorbed, however, this trouble disappears and after cool weather sets in the excess sand may be swept aside and stored for future use. The grounds so treated now present a smooth, dustless, and mudless appearance during all kinds of weather."[4]

A special committee on surfacing of playgrounds reported to the Chicago board of education. Among its suggestions were:

"Future playgrounds should be crowned to drain to the side, rather than the present method of draining to the center.

"In the case of new playgrounds to be constructed, they should be excavated, if necessary, 14 inches; and filled with at least 6 inches of cinders, properly rolled; 6 inches of yellow clay, properly rolled; surfaced with torpedo sand; drained to the side; the subgrade upon which the cinders rest should be parallel to the finished grade.

"All grounds should be treated at least twice a year with a solution of calcium chloride, approximately ¼ of a gallon to the square yard (liquid form). The Chicago park system uses the crystal form on the bridle paths."[5]

The Los Angeles Method

From personal investigation and correspondence the author has learned that Los Angeles uses a form of decomposed granite known as "caliche" which is found in large quantities locally. A base is formed by plowing, harrowing, grading, and rolling the ground. Then a thin layer (about 2 in.) of caliche is spread, soaked with water, raked and rolled. This makes an inexpensive surfacing that will stand hard usage and is porous enough to absorb water. Bermuda grass is also being used extensively.

Other California Cities

Berkeley, Calif., is using a quarry waste which gives very good results. It is a mixture of rock, dust, and clay. It is secured for the cost of hauling. When spread about 1½ inches thick, watered and rolled, it makes a splendid surface. For large playing fields where players are thrown to the ground in the course of games, a sandy clay is used. This is obtained in Oakland when contractors make deep excavations for buildings.

Oakland has found 4 to 6 inches of sandy loam to be satisfactory on the football, baseball, and large play areas. For smaller play areas near buildings approximately 2 inches of rock dust has been used extensively with satisfactory results. Oil macadam costing about 6 cents per square foot has been used for handball, basketball, and volleyball courts. For better types of courts, asphalt and Lay Kold is used. The cost is approximately 12 cents per square foot for these courts.

Santa Barbara uses an asphalt that is dug from pits within 10 miles of the city. The asphalt is already mixed with stone, and needs only to be heated, spread, and rolled to make a hard smooth surface that is suitable for all court games and for areas much used. It costs from 9 to 12 cents per square foot. This price includes the cost of preparing the bed for the asphalt. For larger areas Bermuda grass and sandy loam have been used with satisfactory results.

For keeping down dust, calcium chloride is more widely used than any other material. It may be applied in liquid or crystal form and is not expensive. It may have to be used two or three times a year. Los Angeles reports that clay or gravel surfacing with calcium chloride is not satisfactory. Probably this is due to the small amount of rainfall in that vicinity.

"Glutrin has been tried out as a dust layer in different places with varying success. It is a thick, adhesive liquid, easily soluble in water and in drying becomes a powerful adhesive. Two or three applications at intervals of a few days are necessary in order to permeate the soil thoroughly. The cost is considerable, and some executives feel it is not effective long enough to justify the expense.[3]

Where dust is very bad, a good system of watering the grounds or planting them in Bermuda grass seems the only sure way of allaying it.

School boards must determine what materials are available at the time they are to be used and the cost of each, as this will vary. However, it might be profitable for a board which wants to solve the local problem with some assurance, to spend some time and money experimenting on small areas with the various materials available. Along with this should go experimentation with various methods of preparing the base for surfacing. Too much care can not be given to this phase of playground conditioning.

[4]School Playgrounds Treated with Asphalt Surfacing Material. G. A. McClellan. American City Magazine, Vol. 36, pp. 537–9, April, 1927.

[5]Playground Surfacing. *School Board Journal*, Oct., 1924, p. 83.

SCHOOL FURNITURE BROWN

J. W. McClinton, Secretary, National School Supply Association

School Furniture Brown has come to designate a color finish standard for school equipment, which has been adopted by the school furniture industry in cooperation with the Division of Simplified Practice of the U. S. Department of Commerce.

For many years the matching of color finishes in school equipment has proved a troublesome task both to purchasers and manufacturers. The absence of any standard in color finishes has meant much special finish work. This special finish work is expensive both to the manufacturer and purchaser. It is disorganizing to the former and a cause of much dissatisfaction to the latter. The greatest handicap has been the extent to which it has retarded prompt delivery service. Appreciative of this situation, the school industry, through the National School Supply Association, called upon the U. S. Department of Commerce to cooperate in a program of simplification of color finishes so far as these apply to school equipment.

This resulted in a series of conferences. On April 12, 1929, there was a meeting of manufacturers of school seating, on June 17 a similar meeting of manufacturers of allied school lines such as desks, tables, chairs, filing cabinets, library furniture, etc., and on June 18 a conference of the manufacturers of laboratory furniture. These sessions were presided over by a represenative of the Division of Simplified Practice, U. S. Department of Commerce. All conferences were a unit in the recommendation of a median color finish standard for maple, plain and quartered oak. Sample wood panels of the color finishes were developed by the National School Supply Association through its finishing research laboratory contacts. On June 28, the Department of Commerce called a meeting of representatives of school superintendents, school-board purchasing agents, architects, manufacturers, and all parties interested in the purchase of school equipment. This conference resulted in the adoption of the median color finish standards recommended by the manufacturers in their previous conferences.

These median color finish standards reproduced on paper and approximating the color finish standards appear as an insert in the November issue of the AMERICAN SCHOOL BOARD JOURNAL. It is not the intent that these reproductions should be used as a basis or of testing samples of the median color finish standards, but merely to convey a general idea of the harmonizing plan developed.

Consideration must be given to the fact that different kinds of wood or even the same kind will not react alike to the same stain. On that account a minimum light color finish standard and a maximum dark color finish standard have also been set up. All equipment coming within these limits will be sufficiently close in the color of the finish to produce the desired color matching.

The advantages of simplification of color finishes in school equipment will be increasingly appreciated as the program continues to operate. Boards of education who will purchase equipment in 1935 will have the assurance that it will harmonize in color finish with purchases made in 1930. School officials who purchase different types of equipment, the product of different manufacturers, will find a harmony of color finishes when this equipment has been assembled in the same schoolroom or the same building. School districts who find it necessary to transfer equipment from one room to another or one building to another to meet a shifting school enrollment, will find the equipment thus transferred to harmonize with the equipment already there.

The Association, in cooperation with the U. S. Department of Commerce, has formulated a plan for certification of all color finish standards. The certification is available to all manufacturers of school equipment but is not obligatory.

The program which becomes effective January 1, 1930, does not preclude boards of education from securing any special finishes desired. Manufacturers who conform to the simplification program are still in a position to furnish any finishes desired. It is the hope, however, that the demand for special color finish products will be very much reduced.

CARE OF THE SCHOOL PLANT

The board of education hires the teacher. Generally the county superintendent, or a local superintendent, or supervisor recommends this teacher for appointment. In the average rural school unit, supervised by one or several persons, the area is so wide and the task so difficult that it cannot be done well. The superintendent and his supervisor are first of all concerned about the kind of teaching done, the course of study, and the text books used. Demands for their supervision is so overwhelming that these school officials do not have the time to check upon many other things which ought also to be supervised. The teacher should be held responsible for the protection of the school building and school grounds.

Let the board define to the teacher what is expected of her; let one or more members look over the school property at various intervals offering advice here and there for greater carefulness by the children, of the public property.

Many of the rural teachers are young, and of course, inexperienced. Insisting upon the care of the school property does not always appear so important to them as it should. Members of the board who are accustomed to consider cost, who are responsible for spending the public money of the school community, and who have had business interests and experience, are accustomed to think in terms of property and its care. They, therefore, should not expect the average teacher always to be very observing about the care of the school plant unless they give her guidance and make her conscious of her duties in this matter.—*Garry Cleveland Myers.*

Getting Research into Practice in a Large School System

John L. Stenquist, Baltimore, Maryland

A bureau of research in a public-school system does not exist by or for itself. It is essentially a cooperating enterprise, and it is axiomatic that its value will be directly proportional to the degree in which its influence is felt in each school and in each classroom. While the main energy of teachers and administrators is given over to the operation of the schools, a bureau of research is relieved of the responsibility of actually teaching children, in the hope that it may, through investigation and study, suggest ways and means of improvement. The general problem of the school system as a whole, is how best to carry on each year the education of the children that are passing through the schools; the special problem of the bureau of research is to discover, if possible, better ways of teaching and better ways of organizing and administering the schools.

How shall this be done with untrained research workers in a typical school system? While no two persons facing the issue would proceed in exactly the same way, one general principle seems to be inescapable; namely, that whatever program is undertaken must first be *well sold* to principals, teachers, and all others involved. The first problem becomes one of general education and propaganda in which the advantages of cooperative study of classroom problems may become clear. Teachers, like all other human beings, resent having some oracle, even if such existed, come in to tell them that what they are doing is wrong and to prescribe new procedures. The difficulty is greatly increased by the fact that in education very few if any recommendations can be made with absolute or final certainty. As is well known, most of our policies and practices are in reality on an experimental basis. Hope for progress lies in leading teachers and principals to see for themselves weaknesses in organization and instruction.

A host of problems beset the superintendent of every school system, many of them extremely difficult and involving far-reaching social, educational, and moral implications. Certain of them can never be answered fully or finally because they are dependent upon a continually changing social order.

The Fundamental Problem

The fundamental problem must inevitably center around the matter of *how children learn.* As compared with even the most intricate machines or natural phenomena, the human mind, it is true, is still in many respects a "dark continent," but we are coming to know more of how it operates than before. The great difficulty is how to arrange subjects, programs, schedules, and actual teaching practice that we may be operating *in conformity* with the laws of learning, rather than in disregard of them, as is too often the case. In the Baltimore Bureau of Research, our chief interest from the beginning has been in the learning process itself and in the improvement of instruction. We have taken the position that there is no improvement in instruction unless there is improvement in learning. This conviction has lead to the present program of systematic testing of results of teaching, which results serve as a first step in many studies within our school system. While test results *per se* do not constitute research, they do provide basic data for improving both administrative policies and teaching. They constitute also a type of silent supervision and guidance for teachers and principals that has not been possible hitherto without them.

In Baltimore for the past four terms, every elementary class in the city has been systematically surveyed by means of objective tests that quickly reveal at least some of the weaknesses and strength of each pupil. These surveys are scheduled at the beginning of each term so that teacher, principal, supervisor, and superintendent may each do his part in devising intelligent remedial steps. But to test over 100,000 children each term with any degree of accuracy is so huge an undertaking as to have been impossible until our present testing organization was perfected. From the scientific point of view, what is wanted is a reliable inventory of the mental capacity and achievement of each and every one of some 113,000 pupils. In a public-school system where this work must be done by teachers, not by psychologists or clinicians, we cannot, of course, fully achieve so ambitious an aim. To do so would require a psychological laboratory and a trained psychologist in every school, and such is clearly impractical.

Teachers Do Semiannual Testing

Nevertheless, a great deal of very valuable testing work is done semiannually by the regular faculty in each school. This has been accomplished through a plan of organization in which one teacher in each school has been selected to act as local primary examiner and one to act as local intermediate examiner. These teachers have been gradually trained in the precise technique of the particular tests which are used, and, although they are not trained psychologists, they have demonstrated that they are quite as capable of administering many of the tests suitable in the circumstances as are trained psychologists. Beginning with the current year, the Bureau of Research is instituting regular monthly meetings which will constitute for these examiners something of a course in the general principles of mental measurements. There are at present 111 primary and 117 intermediate examiners. These persons, closely organized under the direction of the Bureau of Research, each in direct contact with her own school, become a key to systematic investigational work. This organization is of very great importance, because through its cooperation city-wide surveys become possible with a minimum of disruption to school programs. It is now no longer necessary to depend upon sporadic individual testing projects, even though many of these are excellent in their purpose and are still being carried on. With this plan, through the united efforts of teachers, examiners, and principals, it becomes possible to obtain speedily city-wide results in a specific subject. In the light of the facts thus obtained, intelligent procedure is made more possible for superintendents, supervisors, and other administrative officers.

It is clear that in such a program, cooperation becomes the key word. The giving of tests is under the control of local examiners, who in turn work in close touch with the Bureau of Research. The work is centralized, yet highly decentralized. While it is controlled from the Bureau of Research, the classroom teacher is the basic unit. Each teacher assists by scoring for one other teacher and checking her own class tests; she tabulates only the results of her own class. All this involves work, but it is a type of work that is of direct and immediate help, for, since the class is in every case new to the teacher, she has a special interest in discovering the weaknesses and strengths of each pupil. All results for the class are summarized on a self-interpreting class-analysis chart by the teacher herself under the guidance of the examiner, who forwards carbon copies to the principal and to the Bureau of Research. The teacher is thus first to obtain the results for her class. She immediately learns which pupils need special help and in which subjects; which pupils are in advance of the class and which behind. The principal through this class-analysis chart obtains at once an inventory of the average ability of every class, together with the actual scores of every pupil in his school.

The Service Station of Testing

Only one who has attempted to carry out testing programs can fully appreciate the significance of such an organization. Responsibility

THE DIRECTOR OF THE BALTIMORE BUREAU OF RESEARCH AND SEVERAL OF HIS STAFF IN CONFERENCE

for reliability in the giving of the test is centered in the local examiner. A double-check scoring scheme insures accurate scoring. The board of superintendents and the supervisors are responsible for the choice of subjects to be tested, the Bureau of Research for the means of testing them, for the general organization and operation of the testing plan, and for the compilation of final city-wide summaries.

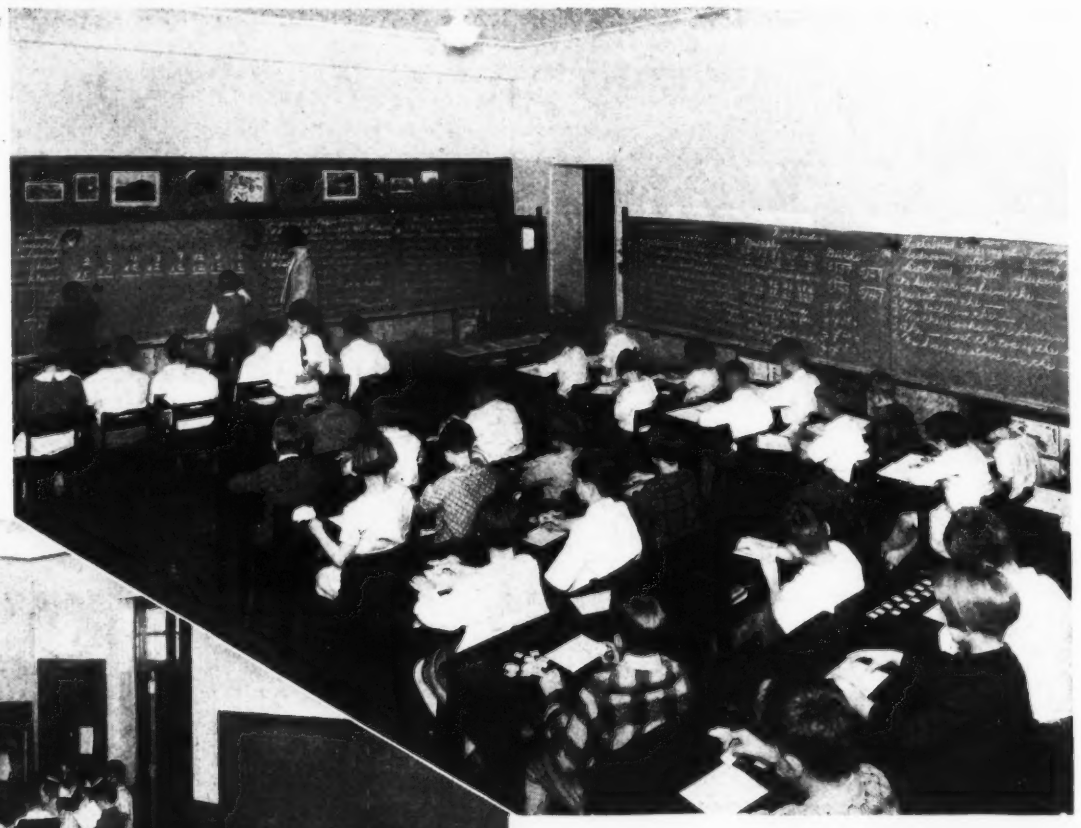
In carrying on such a program a research bureau might well be called a service station. Its value is directly proportional to the degree of cooperation secured and to the effectiveness of coordination of all persons involved. In many respects such work is not in reality research at all. Exhaustive individual studies such as are excellently carried on in psychological laboratories, no matter how valuable, are for the most part impracticable in a public-school system. In another sense, however, a coordinated program of this kind is research of the most basic sort. The problems here are in a large sense sociological. We are forced *willy-nilly* to deal with *large numbers* and to *deal with them quickly*, no matter how much we may be interested in a few individual pupils.

This program yields an enormous quantity of data concerning the children of our schools. In planning and devising schemes to obtain this data, we have learned that every possible device for simplifying the procedure and for improving the reliability of results must be sought. Labor-saving devices of all types become of paramount importance. The testing provides, however, a great network reaching from each individual child up through the teacher, principal, supervisor, to the superintendent of schools. In the light of our results, it becomes possible for teachers, principals, supervisors, and superintendents, to consider intelligently with the Bureau of Research what facts, processes, and skills children fail to learn; how much they learn in a given period; how different types of children succeed and in what direction others fail. This immediately makes possible studies of why pupils fail or succeed. Once having discovered causes, remedies are often not difficult to devise.

JOHN L. STENQUIST,
Director, Bureau of Educational Research,
Department of Education,
Baltimore, Maryland.

We are thus in a position to go forward in a more systematic study of the test results of our schools than we have been heretofore. To be sure, because of the work involved, we are as yet unable to secure as *many* facts about each child as we would wish to have. One of the problems at the Bureau of Research is to discover means to widen the program of fact finding that we may obtain richer and richer practical knowledge of the mental status of each child from term to term, that the effectiveness of each teacher's work may be constantly increased. If such a program be condemned on the ground that it is not research, it is our belief that it is justifying itself a hundredfold on the ground that it is *service*, service addressed to continuous study of what we believe is, and will remain, the basic item in any school system; namely, *how children learn*.

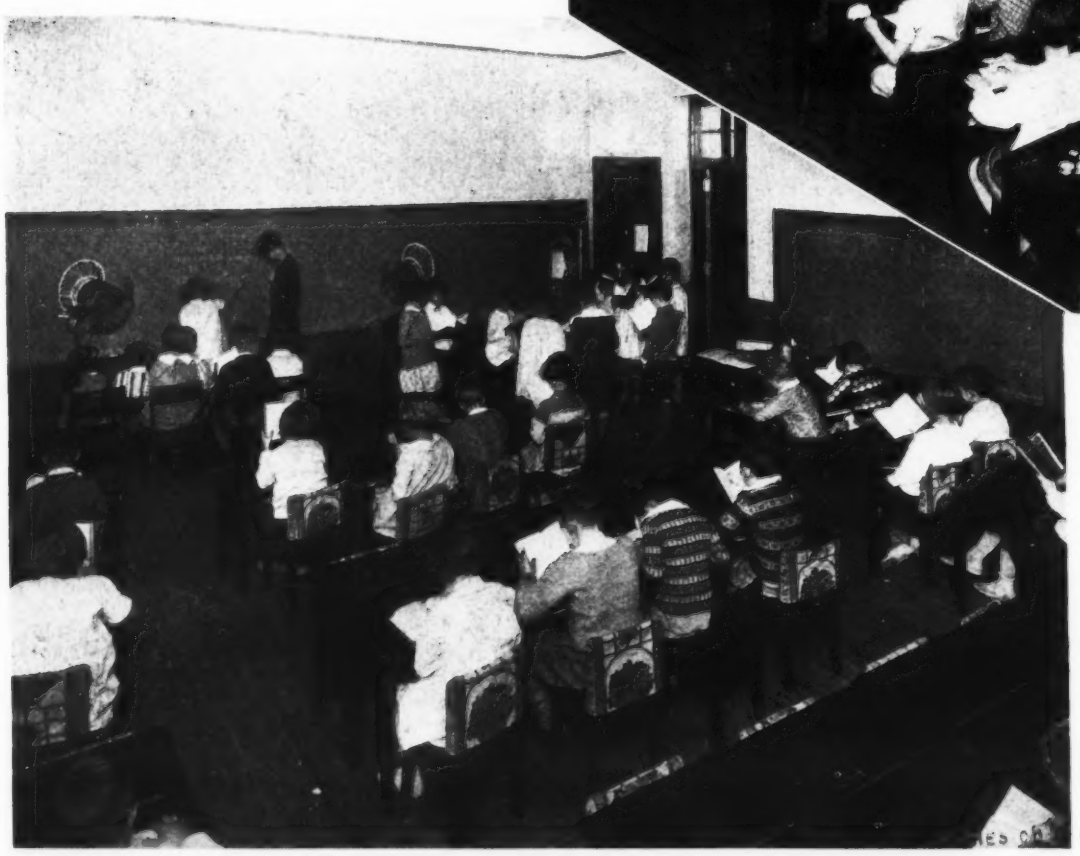
(To be concluded)



GETTING RESEARCH INTO PRACTICE

At the right, an arithmetic lesson in progress—individualized instruction based directly on research.

Group 1, at the blackboard, is engaged in remedial work based on their particular needs; group 2, seated at the right-hand side of the room, is working with practice material; group 3, seated, is playing lotto under the direction of the child standing at the front of the room as a review lesson.



A BUSY, HAPPY CLASS

At the left, a reading lesson under way—individualized instruction based directly on research.

Group 1, at the blackboard, is having a drill in phrases; group 2, at the right near the blackboard, has read a story and is preparing to dramatize it; group 3, seated, is having silent reading.

Factors in the Efficiency of School Heating

The Need for Expert Supervision

R. C. Demary, Akron, Ohio

Just why the mechanical equipment of public buildings, especially school buildings, is allowed to operate year in and year out without supervision other than that of the regular janitor-engineer is hard to tell.

The heating and power equipment in school buildings represents an aggregate of several hundred horse power in the smaller cities, and it runs into thousands of horse power in the large cities; yet only in very few cases is expert supervision provided. Certainly no owners of an industrial plant of equal size would think of operating without a chief engineer or superintendent of power in charge of the mechanical equipment, in order that it might be maintained in condition to operate at all times at its highest point of efficiency.

The efficiency of the mechanical equipment in school heating plants is, like that of the small industrial plants, notoriously low, averaging around 20 per cent according to findings of the U. S. Department of the Interior. This figure may seem low, but the writer, after a survey covering over one hundred small school plants, has found it to be approximately correct. Our larger industrial plants maintain an efficiency of at least 70 per cent, while many of them operate at 80 per cent over long periods of time and not just during test periods.

It is not to be expected that such high efficiencies in heating plants will be attained with the type of equipment in general use, but there is no excuse for the efficiency to drop below 60 per cent. A satisfactory school-heating plant should be maintained around 65 per cent efficiency.

Waste Preventable

To illustrate: Let us take a plant which burns 100 tons annually and which shows an efficiency of 40 per cent. In this school 60 per cent of all the coal burned is dissipated in the form of losses and consequently plays no useful part in heating. Of this 60 per cent loss, 20 or 30 per cent may be considered unpreventable, but this still leaves 30 to 40 per cent loss which is an absolute waste.

The foregoing figures and percentages may not be interesting or may lack conviction. Perhaps we may state this loss in another way. Suppose a hundred tons of coal are placed in the school bunkers and intrusted to the fireman or custodian. He gives away, carts home, or throws out on the ash pile 30 or 40 tons of this supply. Just how long would he remain in charge of the plant?

Our man is perhaps the holder of a state or municipal engineers' license, having passed the required examination, but he is not expected to be familiar with the making of boiler tests, drafts, combustion flue, gas analysis, etc. If he were, there is little chance that he would be holding the position he does. There should, however, be employed in every school system a man who is qualified by experience and training in the theory of combustion, ventilation, and construction and operation of such mechanical equipment as is used in the generation of power, and heating and ventilating.

While the items mentioned may not be the largest in the overhead charges of school systems, a check will show that the largest losses in school-plant operation are in the vicinity of the coal pile. It is here that the school-business department must find and stop wastes.

All waste is an economic crime, and the uneconomical use of fuel is one of the most serious and far-reaching, for it is something that will be felt by posterity. The throwing away of one of nature's greatest gifts is receiving the attention of students in conservation throughout the world. Recently there was held in Pittsburgh, an International Fuel Conference, attended by representatives from every part of the civilized world. The main object of the meeting was the discussion of fuel wastes and of the best means of preventing them.

The main reason for fuel waste is that coal users do not, as a rule, know what is becoming of the fuel they buy and have delivered to the boiler rooms. While it is true that coal is easily wasted, it is also true that a bit of intelligent supervision and rather regular attention to the problem will be repaid by great reductions in fuel costs.

It is the purpose of this article to set forth some of the ways in which the larger waste in school heating plants occurs, and to point out from actual experience how improvements may be made, Facts and examples are more forcible and convincing than declaration and argument.

Draft Regulation

The first source of waste is easily found in draft regulation. When coal was selling for a low cost per ton, the impression was created that, so long as draft intensity was sufficient to maintain required boiler temperatures, nothing further was necessary. Increased cost of fuel soon developed the necessity of the scientific study of combustion, and investigation proved that draft is as important a consideration as the fuel itself. In other words, the best firing results from a minimum of coal are obtained when the right kind of fuel is used and the right amount of draft is maintained.

Not long ago the management of a certain heating plant became convinced that too much coal was being consumed. It was decided that matters could best be improved by installing stokers under the two boilers. Operation under this new plan revealed that coal costs were the same. The new equipment was not even paying a return on the added investment. Consequently executive attention was directed toward locating the difficulty.

A survey indicated that the fireman was operating with no attention to draft. The stokers were piling coal into the furnaces and, combustion being incomplete, large quantities of fuel were being discharged into the ash pits. By simply regulating the damper in the boiler uptake, and cutting down the draft intensity until a slight vacuum was maintained in the furnace, the amount of fuel consumed was at once cut down. The efficiency of the plant was quickly increased from 40 per cent maintained before regulation, to 65 per cent. During most of the season it was found that one boiler could be eliminated, due to the increase in efficiency. When this was done, the one boiler in use was found to be developing 72 per cent efficiency. Draft regulation was the main loss at this plant and it was possible to accomplish the improvement by hand adjustment alone.

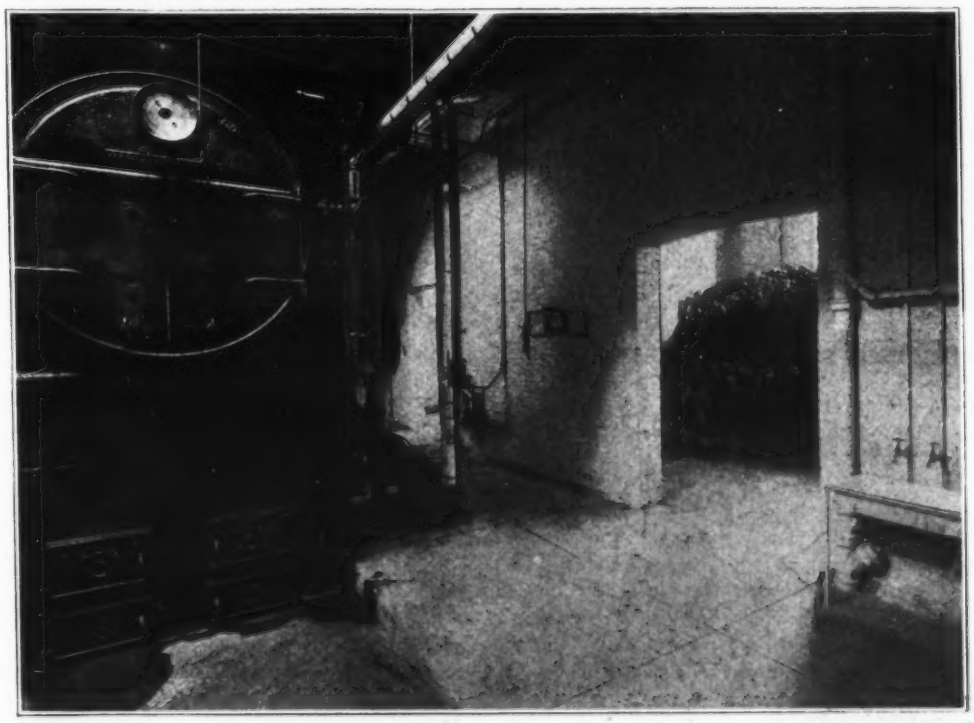
While this is the experience of a single plant, is is, nevertheless, a typical illustration of hundreds of similar situations in plants where coal is being thrown away because of improper draft regulation.

Another plant was investigated where there was a high chimney which developed a very strong draft. The amount of coal consumed was out of all proportion to the heat used. As in the previous case, the boilers were operated with the dampers wide open. A draft gauge was purchased, and the man in charge was instructed in its use. It was readily determined that the boilers could be operated on a draft of less than one half of that formerly used. The coal saving amounted to slightly over one ton each day. The saving may be seen when it is said that they were paying $5.50 per ton for coal. The gauge cost $16.

Improper draft regulation means excess air which is perhaps the worst enemy with which we have to deal. Theoretically, it requires 11.42 pounds of air for burning one pound of the average coal. Yet, as high as 200 pounds of air are being used in thousands of cases. The coal consumed in heating this air cannot be used again, but is an absolute waste.

Soot Removal

Another cause of fuel waste is the ignorance that exists with regard to the internal condition of the boiler. The only function of a boiler is to convert the heat generated by the process of combustion into steam. Anything that occurs to retard this heat transfer is detrimental to good operation. And yet the number of plants which waste a very appreciable percentage of coal by



A CLEAN, WELL-LIGHTED BOILER ROOM
Part of the Boiler and Coal Room, High School, Greenfield, Ohio.
Wm. B. Ittner, Architect, St. Louis, Missouri.

heating up soot, are legion. Soot blowing should be a routine duty, made as easy as possible, for it is a disagreeable job at its best. It is not uncommon to find plants where the custodian pays little or no attention to this detail. Ultimately the soot accumulates and its effect is apparent on the coal bill.

I have seen heating boilers where the soot was three quarters of an inch in thickness, and the fireman admitted to me that he had not cleaned the heating surface for over a month. The boiler heating surfaces should be cleaned of soot every day. This is a rule that should be rigidly enforced.

Boiler Scale as a Cause of Waste

Scale, like soot, prevents the water in a boiler from absorbing the heat liberated by burning the fuel. Scale forms on the inside of the boiler and is caused by impurities consisting largely of mineral salts in the water. Reports from boiler-insurance and inspection companies show that more than half of the boilers which are affected by burned plates and defective tubes, are injured by scale formation. This scale prevents the water from coming into direct contact with the boiler metal and thereby may produce a dangerous condition in the boiler. A series of tests conducted over a period of three months after all scale was removed from an old boiler, showed that the results at the coal pile were 12 per cent in favor of clean heating surfaces.

The losses from scale are represented principally by: (1) extra coal consumed; (2) cost of new tubes and repairs; (3) depreciation on equipment; (4) limitation of boiler capacity.

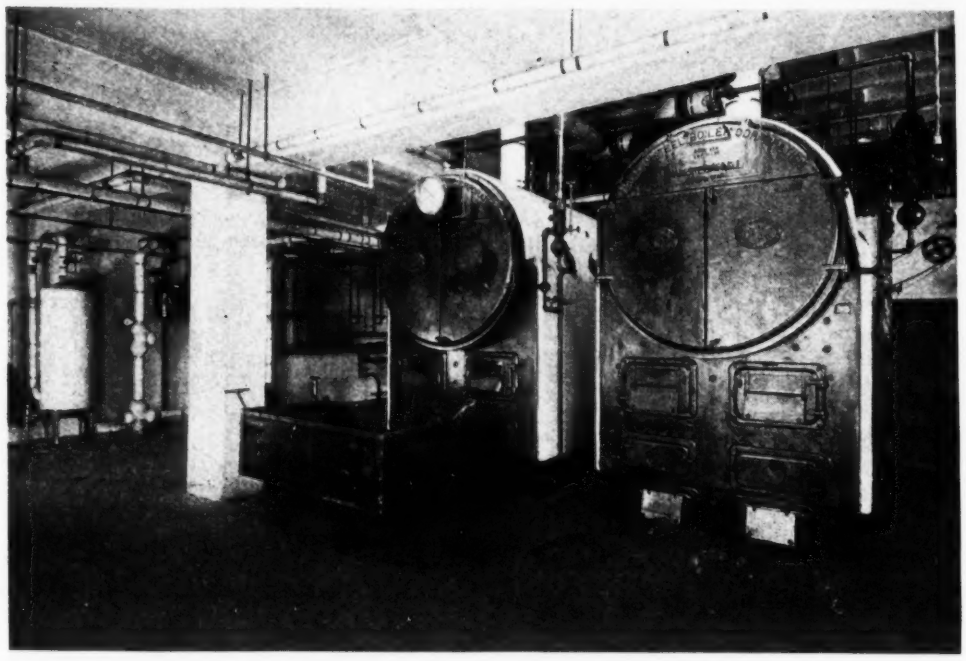
Leaky Brick-Settings of Boilers

While the average efficiency of brick-set boilers is higher than other types used in heating, they are also subject to greater heat losses unless the brickwork is kept in good condition.

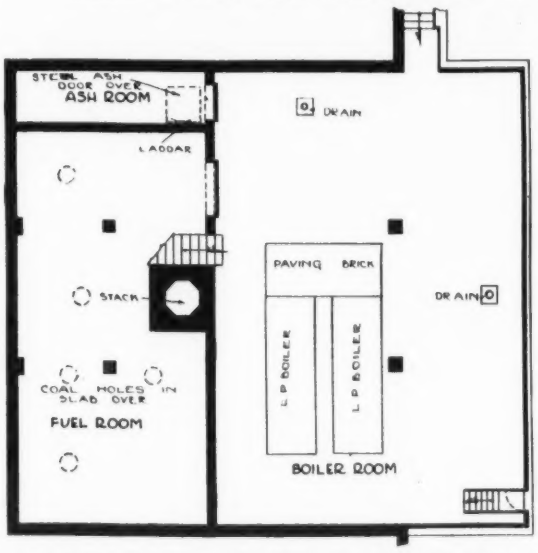
Cracks readily develop in the brickwork, which allow air to filter into the combustion chamber, and this excess air greatly reduces heating efficiency. Leaks in a setting can easily be found by using a lighted candle and going over the brickwork with the flame close to any visible cracks. If there is an air leak, the flame will be sucked into the crack. Every leak means just so much excess air and a reduction in efficiency and consequent increase in fuel consumed. The setting can be made tight by going over it with a plastic compound composed of tar and asbestos fiber. A coating about ⅛ inch thick, spread on with a small trowel, should be used. There are also several plastic cements on the market for just such purposes and they are quite cheap.

A large boiler of the brick-set type, located in a school building, was examined last season and the setting found to be leaking badly. It was covered at a total cost of $11 for material and a fuel saving of approximately 500 pounds of coal each 24 hours resulted. The custodian in charge of the plant was a good, reliable man. He was a careful fireman and a good housekeeper, but he did not understand combustion nor was he expected to. The losses had been going on for three or four years, and would have been instantly detected had there been an experienced supervisor in charge of equipment. It is perfectly safe to assume that 90 per cent of the brick-set boilers used in school buildings are troubled from cracks in the setting and excess air infiltration.

Another interesting case was that of a 20-room school, which had been in use for about five years. No trouble had been experienced with either the heating or ventilating equipment since operations started. About the middle of the season of 1928–29, however, the teachers noticed that the pupils became drowsy or lacked "pep" and that the room temperatures seemed hard to control. There was something wrong with the air conditioning. The air ducts were carefully examined and found to be correct. The entire system was gone over and apparently everything



MECHANICALLY EFFICIENT AND CLEAN
The boiler room of the Longfellow School is typical of all the boiler rooms in the Minneapolis schools. The boilers and all mechanical equipment are clean inside and outside and in as nearly perfect mechanical condition as skilled, careful engineers can keep them. Photograph by courtesy of Mr. George F. Womrath.



FLOOR PLAN OF A TYPICAL ELEMENTARY-SCHOOL BOILER ROOM, MINNEAPOLIS, MINNESOTA

was working properly. Conditions were, however, growing worse.

It became necessary for the school board to call in a heating and ventilating expert. Air temperatures were checked and air delivery measured with a manometer. There was a lack of air or improper delivery. The investigator went at once to the room where the fan was located and shutting it down, opened the slide in the housing and examined the fan blades. In this case the blades were of the curved type, and during the time of operation the inside of the curve had become coated with an accumulation of dust and dirt. At the edge of blades this accumulation was approximately ½ inch thick and so changed the contour of the blade as to defeat the purpose of the design of the fan. When the blades were thoroughly cleaned, the fan functioned as well as when new, and no further complaints were made. The expert presented the school board with a seven page report and a bill for $100.

The situation described has nothing to do with economy or fuel saving, yet it is an important item in the proper maintenance of equipment. The trouble would have been detected at at once by proper supervision. There are thousands of schools in which dust accumulations will be found on the fan blades, and whether they are of the curved or straight type, they will not operate as intended unless clean.

The Item of Grate Surfaces

But to get back to the coal pile: Economy in any school plant, which uses fuel for the generation of power or heat, absolutely demands the correct application of the principles of combustion in order that there may be a maximum production of power with a minimum of waste. Many elements enter into the production of complete combustion. Many of these are considered of no importance by the average person in charge of heating plants and so are overlooked, yet these same elements have a large bearing on the total costs.

We must begin at the grates upon which the coal is burned and see that the air spaces are properly proportioned to avoid loss of fuel into the ash pit. The type of grates used depends on the kind of coal burned. A study of fuel with this point in mind may result in a saving of from 5 to 10 per cent.

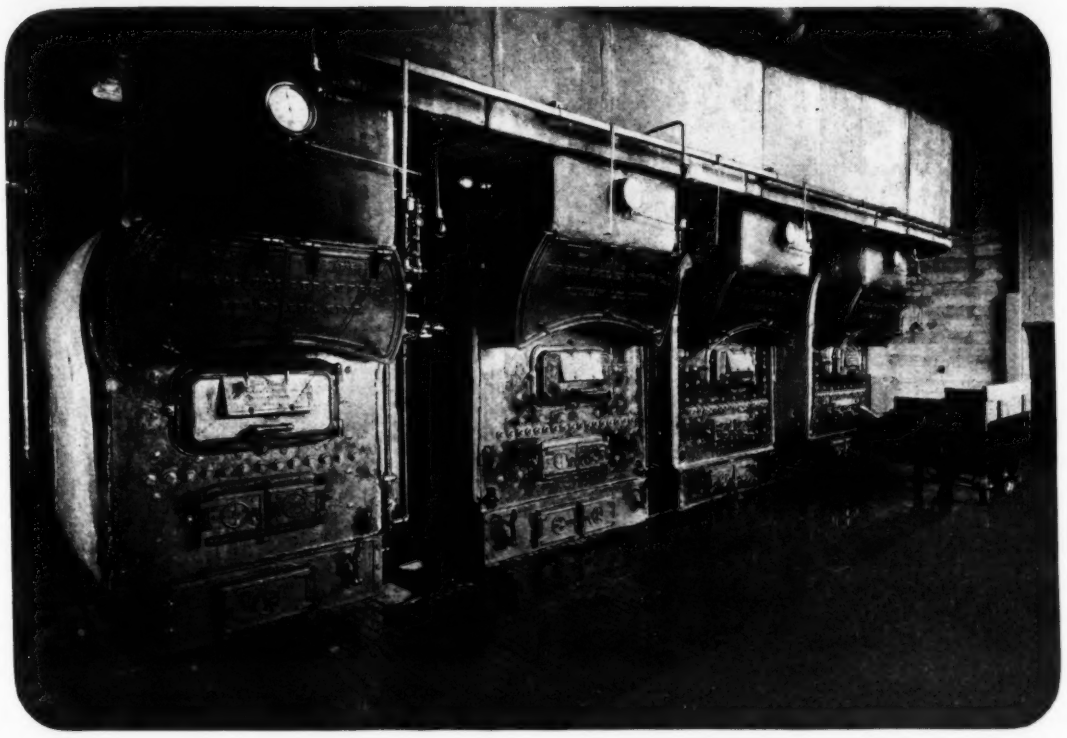
The amount of grate surface is another important item, because it determines the rate at which we can burn our fuel. In hand-fired plants, the rate of combustion should never fall below 15 pounds of coal per square foot per hour, or go above 25 pounds with bituminous coal. If anthracite or hard coal is used, the minimum should be 10 pounds per hour. In moderate weather, such as we have in the spring and fall, it is advisable to cover a portion of the grate with ashes to a depth of 6 or 8 inches and use only a part of the grate for firing. Where there is a large grate surface and the demand for heat is not great, the rate of combustion will be below 15 pounds of coal per hour and a considerable loss will result through improper combustion. By covering a part of the grate, as suggested, the desired rate of combustion can be maintained, with a resulting increase in fuel saving and economy.

With the settings tight to prevent infiltration of air, the heating surfaces of the boiler clean, both inside and out, radiation losses reduced by proper pipe covering, and all condensation returned to the boiler, a good start will have been made in obtaining economy and saving of fuel.

The Human Element

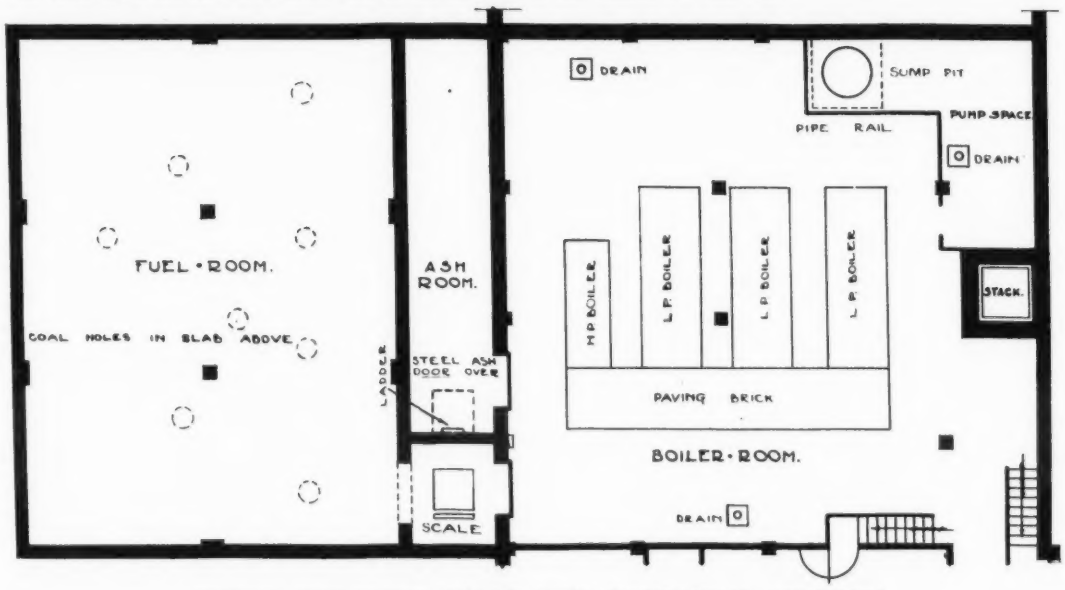
Merely placing the plants and equipment in good condition will not suffice. Conditions change from day to day and from hour to hour. These changes must be interpreted, and the degree of intelligence with which they are interpreted, marks the degree of success which will be realized in fuel saving.

A good plant poorly operated will show low efficiency, while a poor plant skillfully operated will sometimes show a relatively high efficiency. The fireman who wields the shovel is the ultimate factor in the efficiency of a heating plant. In proportion as he does his work skillfully, intelligently, and conscientiously, the plant will be economical. Bad firing shows up principally in five common mistakes: (*a*) allowing holes to



EXPERT CARE UNDER EXPERT SUPERVISION

The boiler room of the Patrick Henry Junior High School is typical of the large heating installations in large school buildings of Minneapolis. Engineer and fireman have been trained in the Janitor-Engineers' School conducted by the Board of Education. They have the benefit of regular inspections and careful supervision of an expert staff. The photograph and plan are shown through the kindness of Mr. George F. Womrath.



TYPICAL HIGH-SCHOOL BOILER ROOM, MINNEAPOLIS, MINNESOTA

develop in the fuel bed, (*b*) carrying too thick a fire, (*c*) carrying an uneven fire, (*d*) carrying too thin a fire, (*e*) improper manipulation of the dampers by which the draft is regulated. In all these the human equation becomes the most important item. Attention concentrated on what takes place from day to day in front of the boilers will pay greater returns for the time spent in instruction and supervision than in any other part of the school building.

Operating Records

The importance of keeping a systematic record of operating costs cannot be overestimated. By this means, the affairs in the mechanical equipment of the buildings is lifted from the realm of guesswork to the field of certainty. The record system must be simple, and the records should be arranged for convenient reference so that not only the supervisor of mechanical equipment, but the members of the school board may make comparisons of present results with past performances. It is thus possible to note the effect of changes in equipment or methods, and improvements in economy or the reverse may be at once detected.

Expert Supervision

Just what expert supervision means in reducing costs in operation may best be illustrated from the reports of the supervisor of school-plant operation in a city in a north central state.

During the season of 1925–26 a total of 34 buildings were heated at a cost of $68,605.30, and a total of 13,600 tons of coal were used. No attention was paid to the purchase of fuel or to the care, upkeep, and operation of the heating plants.

In the summer of 1926, the school board employed a chief engineer or supervisor of mechanical equipment, whose chief duties were to (*a*) instruct the custodians in proper firing methods, and (*b*) to keep a check on the care and upkeep of all mechanical equipment. Under the supervision of this official, the cost of heating was reduced during the season of 1926–27 to $64,755.04, or a total of $3,850.26.

Two of the larger school buildings were using oil for fuel. One of them during the season of 1925–26 consumed oil to the amount of $6,593.30, and the second cost $6,142.80 to heat. A third school was opened in the fall of 1926 and cost $5,064.47 to heat. School No. 1 contained 91,625 sq. ft. of floor area; School No. 2 contained 85,801 sq. ft., and School No. 3, 81,438 sq. ft.

During the summer of 1927 the oil-burning equipment in School No. 3 was replaced by a stoker using slack coal, and the cost of heating was reduced to $1,793.45, representing a saving in this one building of $3,271.02. In building No. 2 one boiler was changed from oil to coal and the net saving was $3,831.46 in one heating season.

During the summer of 1927 several of the buildings were enlarged. In spite of this fact the heating costs were further reduced by the sum of $7,671.85.

In the beginning of the season of 1928–29 four new buildings and several additions to the older ones were opened. Yet the fuel costs were still further reduced by the sum of $1,043.15. As previously stated, a total saving to the school board of $12,865.26 was made during three heating seasons. The area heated had been increased 345,752 sq. ft. over that of 1925–26.

Exclusive of the fuel oil used in the schools mentioned, 13,600 tons of coal were used in 1924 and 1925. In 1926 and 1927 this amount of coal was reduced to 12,609 tons. During 1928 and 1929 the amount of coal consumed was increased to 13,416 tons, which was still 184 tons less than had been used in 1925 and 1926, even though the floor area had been increased by 345,752 sq. ft.

To Summarize

The ultimate efficiency of a plant may very well be expressed in the equation: Ultimate Efficiency—$E \times H$. Here E represents good equipment, and H equals the human element.

The chief losses in operating a heating plant may be summarized under three heads:

1. Dirty boiler—Losses up to 25 per cent
   Remedy—Clean boiler
2. Leaky setting—Losses up to 15 per cent
   Remedy—Tight setting
3. Poor firing—Losses up to 45 per cent
   Remedy—Good firing under expert supervision of a man trained in combustion.

In every city where there are ten or more school buildings, the school board will be justified in employing a man who is capable, through training and experience, to supervise the operation of the mechanical equipment. Every school board should know at all times the exact cost of heating each 100 sq. ft. of floor area or 1,000 cu. ft. of space in any of its school buildings. Only by this means can a check be made on the janitor-engineers and operating costs reduced.

Getting down to "brass tacks" and finding out just what heating costs are and where the money spent for coal is going, is the only safe policy for any school board. It is the only way to find losses and to stop them.

IMPROVING THE QUALIFICATIONS OF TEACHERS OF SPECIAL SUBJECTS

T. Howard Winters, Assistant Director of Education, Columbus, Ohio

Even such standarizing agencies as the North-central Association of Colleges and Secondary Schools have not found it expedient up to this time to define definite qualifications for special teachers.

There seems to be only one field of special teaching, home economics, in which the production of teachers would fully warrant the requirement of a standard degree at this time. In other fields the work has grown much more rapidly than the development of college training facilities. The result has been that the person artistically skilled, or handy with tools, or possessed of a knowledge of shorthand and bookkeeping, however attained, has been called to teach the children his special subject.

There is no good reason for employing a special teacher with less training than an academic teacher, except expediency. These teachers should be a part of the cultural force of the school, and, such, should have a broad background of general education. If pedagogical preparation is really important for teachers, it is important for these teachers.

One way of getting better prepared teachers is to require more preparation. The teachers' college is likely to respond to the demand. The two lines of approach, therefore, are a demand of higher standards for certification, and the conscious effort to develop the training agency. Meanwhile, and in some lines for a long time, we shall have to make the best selection of the skilled man who is promising, and train him in service.

The Courts and Methods of Pupil Transportation

Neal Duncan, Superintendent of Schools, Richmond, Illinois

Fewer cases are to be found in the court decisions regarding methods of conveyance than any other phase of transportation. In general, these matters seem to have caused little disagreement when left to the discretion of the school boards. In the majority of cases where such matters have been decided, with the exception of cases concerning highways and tolls and fares, they have been the incidental rather than the primary cause of the cases which appeared in court.

Nature of Conveyance Provided

In Pennsylvania the question arose to whether or not the vehicle need be a public carrier where the act says "electric railway, school conveyance, or other public transportation." The court said: "Such construction would make such words surplusage, and school conveyances were well known before this act, not then being common carriers."[1]

Where a statute provides for transportation from a district in which the schools have been abandoned to another, a town buggy closed with side curtains and drawn by a horse is sufficient conveyance.[2] The transportation of five children to school in a single-seated open buggy in a sparsely settled community was held not an insufficient compliance as a matter of law, where the statute required that transportation furnished by parents should be safe, comfortable, and convenient, as a condition precedent to the recovery of compensation.[3]

Provision for Highways

The board of directors may use public-school money to open a road to the schoolhouse even though it may at the time be situated on another road.[4]

In an Iowa school district the board of directors and electors at their annual meeting authorized the secretary to take the necessary steps to secure the location of a highway to pass the schoolhouse. The expense of the project was to be borne by taxes collected as a district tax for the schoolhouse fund, the use of which is limited to expenditures for the erection of buildings, and the contingent fund, which the school law intends to be applied for rent, fuel, and minor contingent expenses in keeping the schools in operation. A citizen of the district brought suit to restrain the action as illegal. It was contended by counsel that the expenditure was not necessary to keep the school in operation. The court held that it did not appear whether the schoolhouse site was selected before the enactment of the code requiring that schoolhouses be located on a public road. It was to be presumed that its location was lawful, since there was no evidence to the contrary.[5] Whether it was necessary in order to keep the school in operation that a public highway should be established to or by the schoolhouse was a proper question for the board of directors to pass on. It was lawful for the district to incur the expense of locating the road by the schoolhouse, and money received, from taxes levied might be used for that purpose. Such power was held by the court not to be limited to cases where the schoolhouses were not situated on any public highway. The purpose of the law was to provide means of access by public highways to schoolhouses which were dependent upon the consent of some landowner for the opportunity of reaching the schoolhouse. The owners of land surrounding the schoolhouse might forbid trespassing upon their grounds. If so, no pupil could lawfully go to the schoolhouse and not a load of fuel could be taken there, and the school could not be kept in operation.[6] However, this right of the district to provide public highways to the school is not dependent upon the refusal of passage to pupils over private land.[7]

Minimum Walking Distance

The courts have held, both where transportation is optional and where it is mandatory, that pupils may be required to walk a reasonable distance to meet the conveyance. One half of a mile has been deemed a reasonable distance.[8]

Under a statute providing that, when a school has been discontinued on account of small attendance, it shall be the duty of the township trustee to provide and maintain means of transportation for such pupils as live at a greater distance than two miles from the school to which they have been transferred as a result of such discontinuance, the township trustee cannot be compelled to cause such children to be taken from and returned to their several homes. However, the trustee fulfills his duty by causing a proper conveyance to be driven over a route so established and maintained as to bring the conveyance within reasonable distance of the dwelling place of each pupil. In the present instance all the children could be gathered in one wagon and delivered to the schoolhouse within a total time of one hour and fifteen minutes, while to drive to each home would have required three hours in the morning and the same at night for the trip. This would have necessitated an unreasonable start in the morning and afternoon, and would have resulted in keeping some of the children from five to six hours daily on the road in the wagon. Age and sex also are to be taken into consideration in deciding the distance which a child may be required to walk to meet the school bus. The school authorities are not discriminating against those who must walk farther than others.[9]

In laying down the principle covering such cases, the North Dakota Supreme Court[10] has said, "We are of the opinion that the legislative intention was that actual transportation from the door of the house should be furnished only so far as is reasonably practical; the other words, that the statute is mandatory and not to be avoided, but that it should be construed as passed by reasonable means and should be interpreted according to its spirit."

In a somewhat similar case,[11] the court held that it was within the discretion of the school board to determine whether it was better for children to cross a railroad track alone to meet the school bus, or to drive the bus across the track with the other children. The board decided to have the plaintiff's walk across the tracks and wait there for the bus, even though there was no shelter for the plaintiff's children at the meeting place.

Maximum Distance Conveyed

In Louisiana, it has been held that the statutes do not compel the school board to furnish transportation for children more than two miles from a school of suitable grade.[12] This is the only decision found confining transportation limits to any exact, stated distance. Other decisions usually limit it to a reasonable distance. The short distance allowed in this case seems quite extreme. In a case[13] where the court held that the school might furnish transportation when there was a sufficient number living too far from the school to attend otherwise, one might infer that if there was but one child, or two, that such transportation would not be justified on the grounds that it would be depriving the other children of the district of their educational opportunities to some extent.

In Massachusetts, it was held that a town is not bound to furnish transportation to and from school to children of school age who live on an island some little distance from the mainland, on which a schoolhouse is located, especially where access from the island to the mainland is always inconvenient, and at certain seasons of the year impossible. The decision as to the arrangements that should be made for the education of these children, lies within the discretion of the school board.[14] But elsewhere it has been held[15] that, when children live too far from the schoolhouse to be transported daily, it is mandatory on the school board to provide board and lodging near the schoolhouse in place of transportation. However, this last is the only case of its kind that careful search has brought to light.

Sheltered Gathering Places

The designation of places as depots to gather children, when provided for by law, is optional with the board of education. But if this discretion has been exercised and certain places have been designated as depots, then shelter is required to be provided for the children.[16] And in transporting the children, it is enough to take the pupils to school from the shelters, provided they are not more than one and one-half miles from the homes of the children, and to return them from school to the shelters.[17] When computing distance that the children must walk, the distances referred to are to be measured by roads which are actually open and passable, and not as the crow flies.[18] In computing the distance from the home to the nearest public school of the

[1]Commonwealth ex rel Rodney v. Benton Township School District, (1923), 120 Atl. 661; 277 Pa. 13.
[2]Greenlee v. Newton School Township, Jasper County, (1914), 104 N. E. 610, 55 Ind. App. 630.
[3]Andrews v. School District No. 1, Town of Knapp, (1924), 197 N. W. 913; 197 Wis. 913.
[4]Independent School District of Flint River v. Kelly, (1881), 8 N. W. 426, 35 Iowa 568.
[5]McShane v. Board of School Directors, (1888), 41, N. W. 33, 75 Iowa 335.
[6]Brockway et al v. Board of Supervisors of Louisa County, (1907), 110 N. W. 844, 133 Iowa 293.
Bellmeyer v. Independent District, (1876), 44 Iowa 564.
[7]Bogaard v. Independent School District of Plainview et al, (1895), 61 N. W. 859, 93 Iowa 269.
[8]State ex rel v. Board of Education of Lykens Township, Crawford County, (1921), 132 N. E. 16, 102 Ohio St. 446.
[9]Lyle v. State ex rel Smith, (1909), 88 N. E. 850; 172 Ind. 582.
[10]State ex rel Brand v. Mostad et al, (1914), 148 N. W. 831, 28 N. Dak. 244.
[11]State ex rel Stewart et al v. Miller, (1923), 141, N. E. 50, 108 Ohio St. 454.
[12]Wall v. Livingston Parish Board, (1925), 1 La. App. 730.
[13]Cross et al v. Fisher et al, (1915), 177 S. W. 43, 132 Tenn. 31.
[14]Newcome v. Inhabitants of Rockport, (1903), 66 N. E. 132, 183 Mass. 74.
[15]Mendenhall v. Slim Buttes District No. 4, Harding County, (1923), 196 N. W. 97, 47 S. Dak. 94.
[16]State ex rel Solze v. Board of Education of Lykens Township, Crawford County, (1920), 132 N. E. 16, 102 Ohio St. 446.
[17]Commonwealth ex rel Rodney v. Benton Township School District, (1923), 120 Atl. 661, 277 Pa. 13.
[18]State ex rel Johnson v. Mostad, et al, School Directors, (1916), 158 N. W. 349, 34 N. Dak. 330.

KINDNESS IN TEACHING

Kindness is a greater factor in pedagogy than some teachers seem ready to admit. If teachers whose tendency is to be depressed and fretful, to think little good of some of the members of their classes, would only make a deliberate study and pursuit of kindness, they would be astonished to find the brightening results in their own life. They would find that kindness in and out of the classroom has an untold power of developing not only its like, but actual good in others. Just as the sun, in the fable so familiar to us all, caused the traveler to throw open his cloak, when the cold wind only made him fold it closer round him, so a kind act or word in the classroom, sometimes merely a kind look, has a magic power to dispel moral clouds, and to bring forth rainbows where it was fancied there was naught save storm. The oft-quoted lines, which tell us that:

"Oft a word at random spoken,
Will heal or bruise a heart half-broken,"

contain a moral which never can grow old.

—Eugene Bertram Willard.

district, the Wisconsin court[19] held that, when the distance is to be measured by the nearest traveled highway, this may include a private lane. But unless this private lane is owned by the parent of the children, such a decision might compel the children to walk an unreasonable distance to get to the nearest school or school transportation route, as when the owner of the land would forbid the use of his private lane.

Compulsory Attendance

Where compulsory attendance at a public school, and conveyance of pupils living beyond a certain distance from the schoolhouse, are both provided for by statute, the parent or guardian of a pupil living beyond the specified distance is not amenable to the compulsory attendance law when no conveyance is provided. The statute does not require the parent to furnish the district transportation at his own expense or at a rate thought reasonable by the board.[20]

Where the statute requires not less than five months' school attendance while a child is being transported, it does not require one hundred per cent consecutive attendance, but merely requires that the child attend school at least one hundred days during the time which he is transported.[21] In one case under the above statute a parent transported his three children to school, one for 99, one for 98, and one for 84 days during the school year. He was refused compensation for all of his work on the grounds that none of them had attended one hundred days. This seems unjust and the opinion of the dissenting judge is quoted as representing what would seem more in accordance with the ideas of the presumably reasonable men who framed this statute. "The children were transported every day of the term in which they were able to attend, and, if so, I believe it to be a substantial compliance with the statute. To hold otherwise is to ignore the purpose of the statute and give it a highly technical construction. . . . Of course, the plaintiff could not recover pay for those days any child was not in actual attendance. . . . He evidently did in good faith all that was possible to comply with the law, and should not forfeit because of misfortune over which he had no control.[22]

Fares and Tolls

In providing for the transportation of children, they may be given advantage at the expense of private corporations. Legislation giving special privileges to a class of persons is constitutional only if public welfare occasions a reasonable need for a different treatment of the class of persons selected and provided that all persons in this class are affected the same under the same circumstances.[23] The duty of the state to provide a system of public education seems sufficient justification of this manner of discrimination.[24]

A railroad has the right to establish a reduced rate for students under the fixed rate,[25] and in case a reduced street-car fare is required by a city ordinance and the company accepts the contract, a pupil who is refused a ticket at the legal price may sue for damages that he has sustained thereby.[26] Such reduced fare may be made a condition upon which a franchise will be granted to a railway company by a city. Since the acceptance of such a franchise is a matter of contract on the part of the company, it cannot be heard to complain because its performance causes it to lose. Upon the acceptance of such a franchise, the railway company may be mandamused to cause it to perform its duty.[27] A company may be fined for a violation of an ordinance requiring reduced-fare tickets to be sold to students. Such a requirement, either mandatory or permissive, may be found in the statutes of several states.

Class of Pupils Entitled to Fare

"Pupils" is a word having a broader significance than "children" and in a franchise or ordinance providing for reduced fares, it is important to observe which of the two words is used. "Children" is used to mean only young people in attendance at institutions of a subordinate character. This meaning attaching to the word "children" led the supreme court of Virginia to hold that pupils of the Smithdeal Business College and Richmond College, also, were entitled to reduced rates under an ordinance giving such "to pupils presenting a certificate of enrollment in some school."[28]

Yet the supreme court of Massachusetts would disagree over the meaning of the word "school" for it has held [29] that an agreement to provide transportation at a reduced rate for pupils in attendance upon public schools, state normal schools, or any school in a designated place, does not apply to students attending a business college or institute, although the word "school" is undoubtedly one of broad significance, and sometimes it may appear, by the connection in which it is used, to include higher institutions of learning such as colleges or universities or institutions for the teaching of trades, professions, or business. But it held that neither a college nor a business institute can fairly come within the language of the agreement. And, in construing the meaning of an ordinance requiring reduced rates for pupils, the negotiations between the company and the city council may be examined as throwing light on the subject. The construction the parties themselves have placed on the language is also to be considered; and, if the company for a time has given reduced rates to students of a business college, it tends to show that they are included in the ordinance.[30]

Reduced Fares Permitted

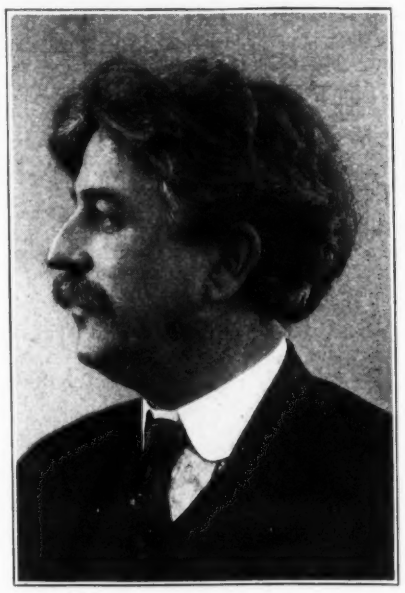
In a later case[31] involving the same questions, the court said: "The legislative rate must be so small as to occasion a loss to the carrier, if it performs the service required at the price permitted, before it would be held unconstitutional, provided the total net earnings are such as to yield a reasonable return upon the value of the corporation as a whole, having regard to the fact that this is a burden imposed by a police regulation in the interest of education. It is not enough to show that no profit might come from the particular service; it must appear that in conjunction with all the service of the corporation the rate is unreasonable and is equivalent to spoliation. The presumption is that the rate fixed by the legislature is reasonable. The onus rests upon the carrier to show the contrary. The case must be a very clear one before the courts will interfere with a legislative determination of rate." But if it plainly appeared that the enforcement of such law would have to bear, or put upon the other classes of passengers in the form of increased rates to make good, the loss from carrying school children at half rates, it would be a taking of property without due process of law, through unconstitutional discrimination. In estimating the cost of carrying such school children, the legislature may properly consider the size of such children, and the time at which they travel on the cars, as well as the probable increase in travel by reason of such reduced fares, estimating that for these reasons the railway company would suffer no loss in carrying the children at half fare. Nothing less than a certainty that the provision would cause loss to the railway company, or to some of them, would enable the United States Supreme Court to hold that the legislatures were powerless to make this requirement.[32]

No Toll Charged

Several of the southern states provide in their statutes that no toll shall be charged of children, going to and from the public school, who pass over any bridges, ferries, or roads owned by a municipality, a private corporation, the state or any of its political subdivisions. It has been held that it is proper for the state to make such provision in its statutes, but it has also been held that such provision does not allow the school children to use the road free of toll when on the way to school, if they carry milk and vegetables to town.[33] The court said: "If it were otherwise, every farmer could load his wagon with the products of his farm, place his children on it and a driver in charge, and thus haul his produce on the road free of charge. The statute means to

PASSING OF MR. MILLIGAN

Mr. R. M. Milligan, for the past fifteen years commissioner of school buildings for the board of education of St. Louis, Mo., died at his home in that city on September 30, after a brief illness.



R. M. MILLIGAN,
Late Commissioner of School Buildings,
St. Louis, Missouri

Mr. Milligan was born near Kingston, Ont., Canada, in January, 1868, and received his common-school education in the schools of that city. He attended the high school in Wichita, Kans., and completed his collegiate course in Lewis Academy. His architectural training was obtained in the offices of a number of architects in Wichita, Denver, and St. Louis.

In the practice of his profession, Mr. Milligan had devoted the larger part of his time to public and semipublic work in St. Louis. He was one of the organizers and the first president of the St. Louis Architectural Club, now affiliated with Washington University.

In October, 1914, Mr. Milligan was appointed commissioner of school buildings for the St. Louis school board, and in October, 1918, was reelected for a term of four years. Since that time he has been regularly reelected to the office and has enjoyed practically permanent tenure.

Mr. Milligan was the first president of the National Association of School-Building Officials and was again elected to the same office in 1925. He has also served as vice-president and secretary of the Association. He was a member of the National Council on Schoolhouse Construction and of the Public-School Business Officials Association.

[19]Pagel v. School District No. 1, Town of Concord, (1924), 199, N. W. 67, 184, Wis. 251.
[20]State v. Hall, (1906), 64 Atl. 1102, 64 N. H. 61. Ann. Case 1912 A. 375.
[21]Andrews v. School District No. 1, Town of Knapp, Jackson County, (1924), 197 N. W. 813, 197 Wis. 813.
[22]Standingwater v. District No. 2 of Town of Kingston, Juneau County, Wisconsin, (1924), 197 N. W. 928, 183 Wis. 356.
[23]American Sugar Refining Co. v. Louisiana, (1907), 45 U. S. (law ed.) 102, 179 U. S. 89.
Magoun v. Ill. Trust and Savings Bank et al, (1898), 42 U. S. (law ed.) 1037, 170 U. S. 283.
[24]Harvard Law Review, 18; 618.
[25]Fitzmaurice v. New York, N. S. & H. R. R., (1906), 78 N. E. 418, 192, Mass. 159.
[26]Grimes v. Minneapolis L & M. R. Co., (1887), 33 N. W. 34, 37 Minn. 67.
[27]Oklahoma City v. Oklahoma Railway Co., (1907), 93 Pac. 48, 20 Okla. 1, 16 L. R. A. N. S. 651.
[28]Northrup et al v. City of Richmond, (1906), 53 S. E. 962, 105 Va. 335, notes 11 L. R. A. N. S. 973, and 16 L. R. A. N. S. 651.
[29]Murphy et al v. Worcester Consolidated Street Railway Company, (1908), 85 N. E. 507, 199 Mass. 279.
[30]Northrup et al v. City of Richmond, (1906), 53 S. E. 962, 105 Va. 335.
[31]Commonwealth v. Boston & N. St. Ry. Co., (1912), 98 N. E. 1075, 212 Mass. 82.
[32]Commonwealth of Massachusetts v. Interstate Consolidated Railway Company, (1905), 73 N. E. 530, 187 Mass. 436, 11 L. R. A. N. S. 973; Affirmed 207 U. S. 79, (1907), 52 U. S. (law ed.) 111, 28 Sup. Ct. Rep. 26.
[33]Lebanon & P. Turnpike Road Company v. Adams et al, (1897), 39 S. W. 410, 19 Ky. L. Rep. 79.

(Concluded on Page 146)

The Financial Control of Student Activities

W. H. Myers, Valley Junction, Iowa

Valley Junction, Iowa, is a town of about five thousand people, just outside the city of Des Moines.

The high school at this place has long been prominent because of its excellent showing in football. During an 8-year period just past, the school's team has played a total of 71 games, of which 13 were defeats, 9 were tie games and 49 were victories. These games were played against schools of considerably larger average size than Valley Junction: the high schools of Des Moines were regular contestants on the football field with Valley Junction. In spite of this heavy opposition the Valley Junction winning percentage for the 8-year period has been .790.

But during this same period in which football gained such success and prestige, all other student activities steadily declined in popularity, in quality of performance, and in ability to draw patronage. The school seemed to be in the control of a tendency toward unlimited expansion in football and a corresponding recession in all other phases of club activity. Naturally the school heads eventually became desirous of inaugurating a more comprehensive and more evenly balanced program; and as a preliminary measure these officials took some pains in the spring of 1927 to see that the high-school faculty for the ensuing year contained coaching talent of a high order — in music, dramatics, debating, and journalism. The next move was to secure from all available sources donations of money for meeting the expenses of promoting these various types of activity among small groups of students and to pay the expense of participating in state contests in the spring of 1928.

The Finance Element

Good fortune smiled on these efforts and an enthusiasm was developed along the new lines much beyond expectations and out of all proportion to the meager funds available for promotion purposes. A bell-ringer climax was reached when the school's dramatic team, presenting "The Giant Stair," won first place at the state drama contest sponsored in April, 1928, by the University of Iowa. This was the highest ranking honor the school had ever won and was in a field never before attempted.

The school officials had sensed from the beginning of their new venture the final significance of the old adage, "money talks"; and they were keenly aware that in the Valley Junction situation money had been talking mostly football. The school's activity income had for years been almost wholly concentrated upon athletic expansion, and the whole community enthusiasm had become centered in that objective. The superintendent, the high-school principal, and the major portion of the high-school staff agreed that the only means of balancing the advantages among the different types of activities was to pool all activity income into a central fund and put this in the control of a central finance committee with full authority to budget it out among the various activities according to their needs and value regardless of the original source of any part of the income. It was believed that this plan would result in a new alignment of club interest and tend to restore proper organization balance throughout the student body.

A careful study was made of the 25th Year Book of the Society for the Study of Education, and other recognized authorities dealing with the organization and financial control of high-school activities.

The Plan Introduced Gradually

As a result of these studies there was presented to the board of education in November, 1927, a student-activity constitution which was duly approved and adopted, with the provision that it should become operative at the opening of the second semester on January 16, 1928.

However, the athletic sponsors of the school and of the town became alarmed, and at the next board meeting filed a vigorous protest against the proposed change of policy. The superintendent responded by voluntarily agreeing to postpone the active operation of the activity constitution for another semester, thus delaying the trial of the new plan until September, 1928. In the meantime, the proposed constitution was submitted to a score of the best-known authorities on school-activities organization. The response to these inquiries was unanimous — a wholly unexpected degree of helpfulness—and the commendation was definitely favorable; so the Valley Junction promoters felt considerably encouraged and awaited the coming September with much interest.

When the new date arrived the athletic interests again objected; but they were overruled and the proposed constitution for reorganization went into effect with the first semester of the school year 1928–29.

Important Details

The provisions of this constitution are few, but they are definite and effective. Section two provides that "all student activities of the Valley Junction high schools shall be under the control and supervision of the respective principals of such schools; but each principal may, at his discretion, delegate the details of management to faculty committees, sponsors, or to competent student councils."

Students activities are definitely limited and are placed under the direct supervision of a central finance committee. Section four requires that "all student-activity monies shall be deposited with the general school treasurer, and all monies received from the main student activities shall be used for the promotion of all such activities. The general school treasurer acts only as depository for monies belonging to the class organizations, to class and special subject clubs, and to other minor organizations which are permitted.

A yearly budget is required in advance from all faculty sponsors. This budget estimate is passed on by the central finance committee, which is composed of the superintendent of schools as chairman, the principal and assistant principal of the senior high school, the principal of the junior high school, the president of the student council, and such students as are elected by the students at the discretion of the superintendent. The finance committee has the following powers:

"To prescribe a system of accounting and to provide the necessary blanks for conducting the high-school activity business.

"To appoint a school treasurer, to provide a legal bond for the same, and to conduct and publish a semiannual audit of the student-activity accounts.

"To call for the individual budgets from all the high-school activities.

"To organize from these a complete central budget, specifying the itemized estimates of expenses and of income.

"To provide for student-semester tickets, admitting the student to all high-school functions at the lowest price sufficient to maintain the various activities.

"To supervise the sale of admission tickets, the raising of school funds, or the collection of assessments.

"To recommend student assessments when necessary as a means of meeting activity needs, such assessments to become operative only after a two-thirds majority vote of the student body, and in no case to exceed a total of $1 per student in any single semester."

MR. A. F. HARMAN,
State Superintendent of Public Instruction,
Montgomery, Alabama

The constitution provides that "donations from outside the school may be accepted on behalf of the school for any activity and are not considered a reason for reducing the annual budget allowance of the activity benefiting."

No public solicitation of funds is permitted, except upon a resolution of the board of education. A full audit of all financial transactions, collections, deposits, and disbursements is made at the end of each semester and is published in a newspaper designated by the board of education.

The Plan in Operation

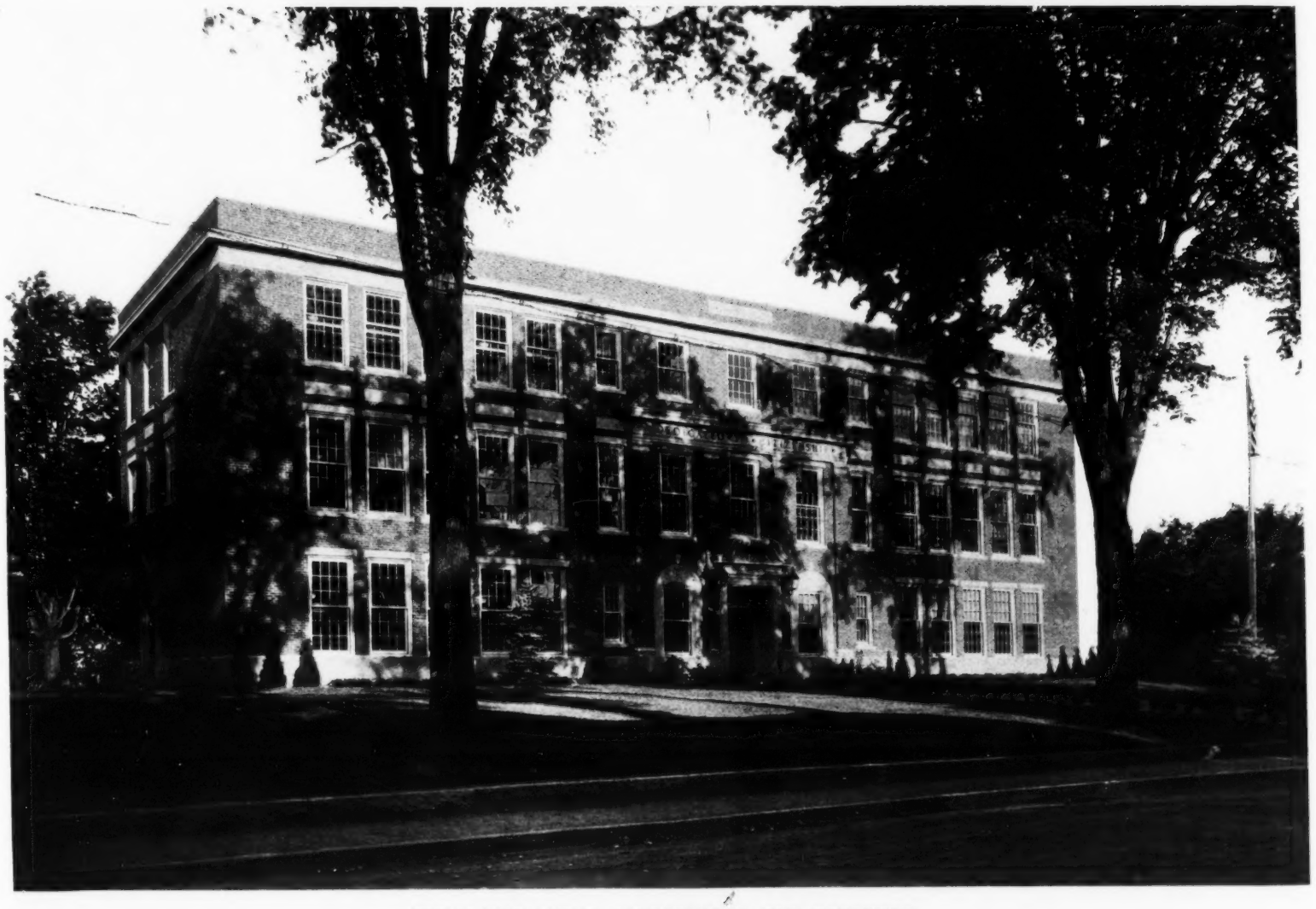
Student-activities tickets are offered at $1.75 each per semester, payable 25 cents in advance and in any convenient installments thereafter down to as low as 10 cents a week. Comparatively few students need or use the minimum rate of payment; in fact a majority of them pay cash in advance in order to be free from the irksome attention required to keep up small weekly payments. Any delinquent ticket is taken up by the class sponsor and held in escrow until the delinquent payments are met in full.

During the year that the plan has been in operation it has worked with a degree of success and satisfaction much beyond the expectations of its promoters. The student tickets have been eagerly bought; we have had ample funds for all our needs; student interest in club activities has been greatly increased and diversified; the civic organizations of the town have awakened to the new possibilities of their community high school, and have shown enthusiastic approval of the progress being made along nonathletic lines. And happily, the athletic season proved to be one of the most successful in the school's history, notwithstanding the new regime.

Student Cooperation Improved

The unity and cooperative spirit of the student body has been noticeably more harmonious and enthusiastic than ever before, and the good will among faculty member more uniform. Such improved conditions are, of course, a natural outcome of the increased respect for and reliance upon the spirit of the square deal in the new plan of apportioning the school's activity income and of providing a wide range of opportunity and privilege.

(Concluded on Page 146)



SENIOR HIGH SCHOOL, SOMERSWORTH, NEW HAMPSHIRE
Charles G. Loring, Architect, Boston, Massachusetts

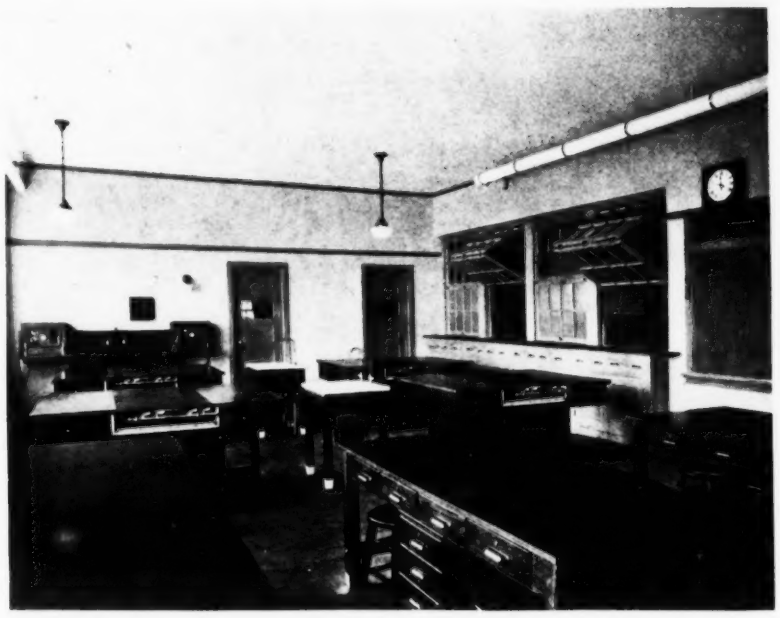
Some Interesting New England Schoolhouses

Work of Mr. Charles G. Loring, Architect, Boston

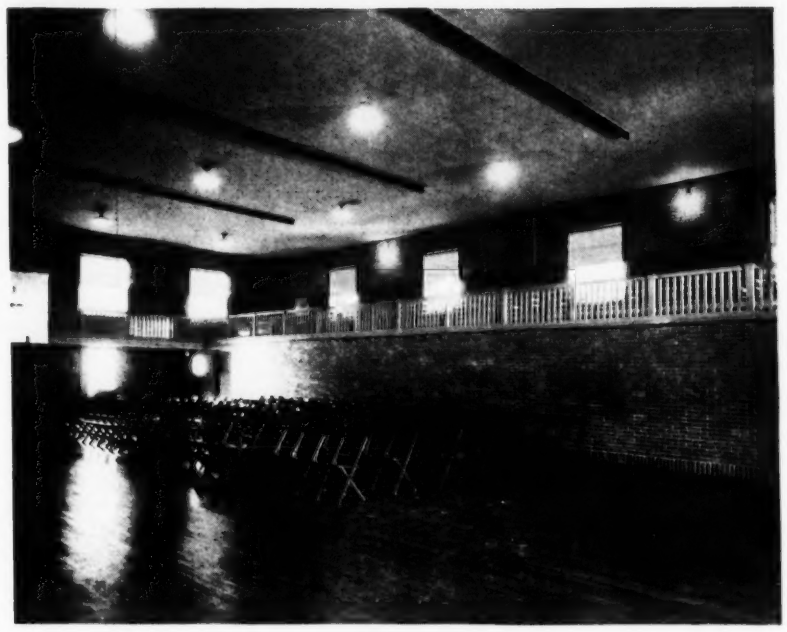
No section of the United States has made such interesting and valuable use of its architectural heritage as has New England. In no section of the country have school architects followed so closely or developed such consistent, suitable, and beautiful applications of a style as have the school architects of New England. While here and there, buildings have been erected in the more ornate expressions of the English Georgian tradition, the spirit of the old New England colonial work has been manifest everywhere, giving the buildings a distinctive character and expressing the ideals and spirit of the people as well as the character of the schoolwork conducted within their walls.

Of the architects who have done considerable schoolhouse work in the New England states, none has sensed the spirit of the colonial, or has applied it with greater success than Mr. Charles G. Loring of Boston. All of Mr. Loring's work represents a fine feeling for the inherent beauty of the colonial, an understanding of the proper use of materials, and a fine restraint in the distribution and use of ornament. His buildings have been adapted beautifully to their surroundings, especially in the smaller towns where modest planting, combined with wide lawns and beautiful old trees, have provided an air of quiet and dignity, and have made the school buildings an important part of the town picture. Incidentally, the buildings are very economically planned from the standpoint of the use of space, the hard usage by children, and minimum costs for upkeep over long periods of time. In each case, the buildings have been planned with a program laid down by the school authorities as the starting point and the final determining factor

ENTRANCE DETAILS, SENIOR HIGH SCHOOL, SOMERSWORTH, NEW HAMPSHIRE
Charles G. Loring, Architect, Boston, Massachusetts

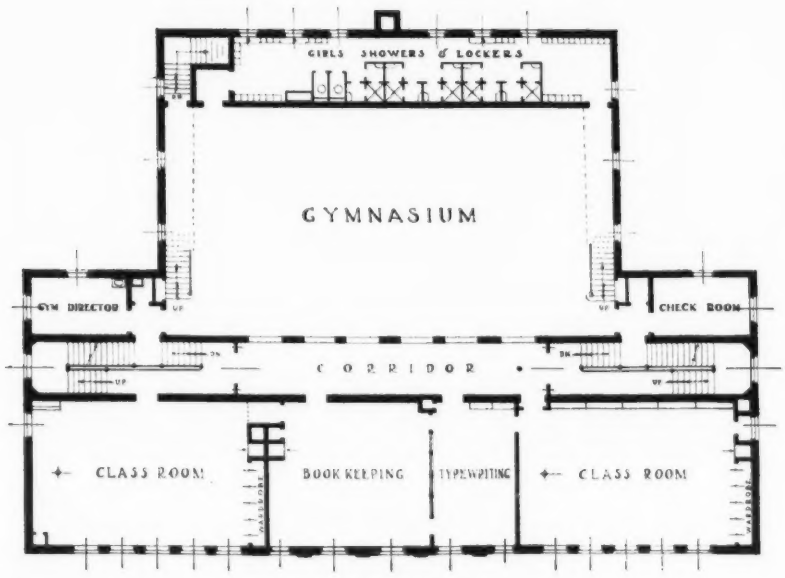


PHYSICS LABORATORY



GYMNASIUM

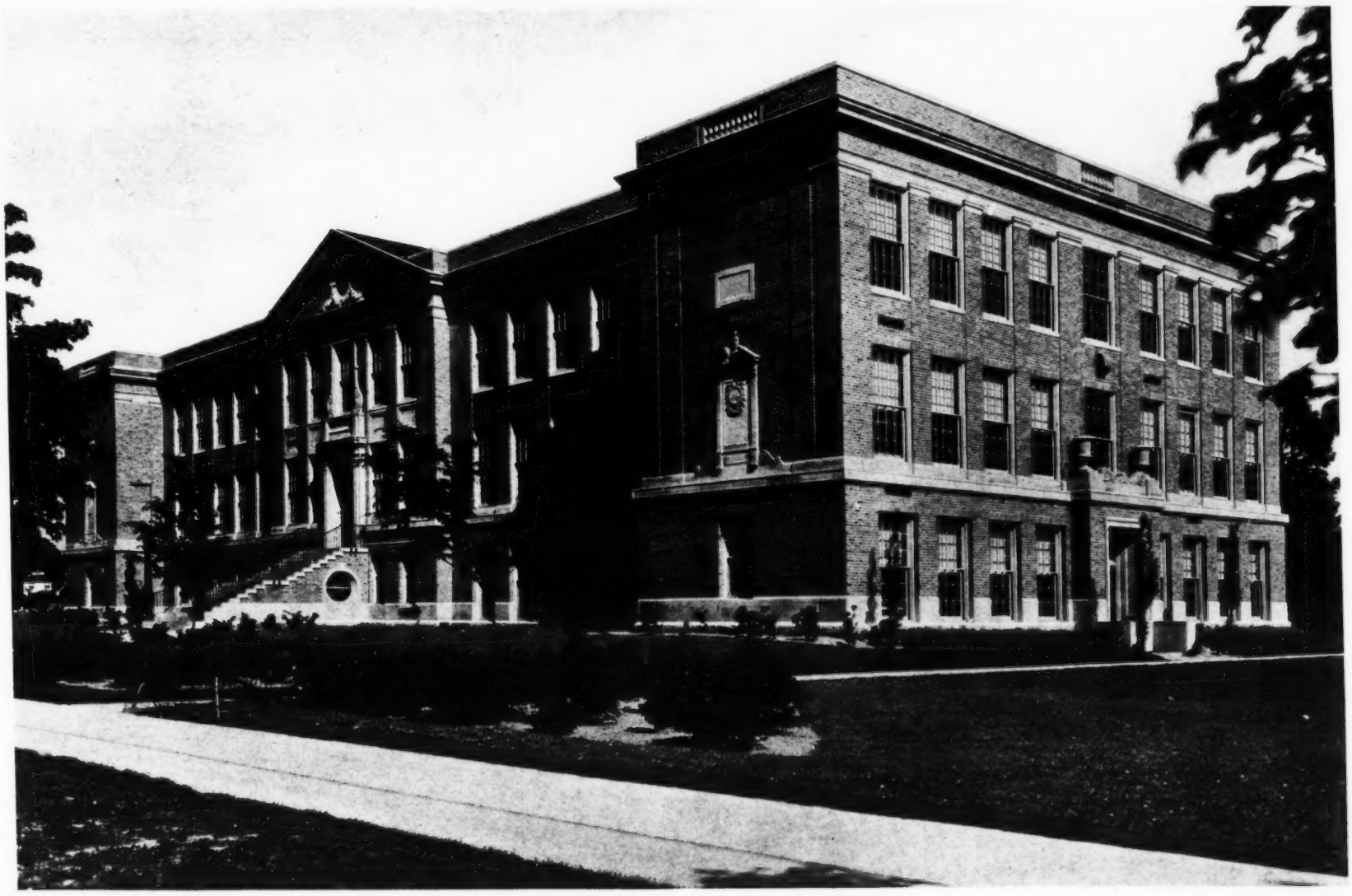
FIRST FLOOR PLAN



SECOND FLOOR PLAN

SENIOR HIGH SCHOOL, SOMERSWORTH, NEW HAMPSHIRE
Charles G. Loring, Architect, Boston, Massachusetts

PROPOSED EXPANSION OF RICHMOND SCHOOL GROUP, DANVERS, MASSACHUSETTS (See Page 51)
Charles G. Loring, Architect, Boston, Massachusetts



RICHMOND SCHOOL, DANVERS, MASSACHUSETTS
Charles G. Loring, Architect, Boston, Massachusetts

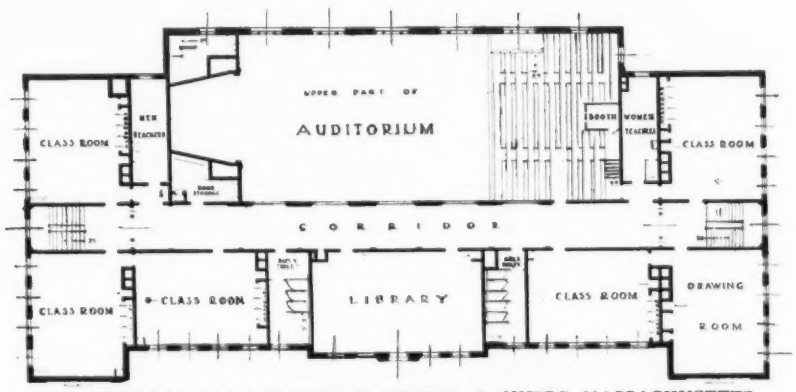
for every major feature and for all minor details.

The Somersworth Senior High School

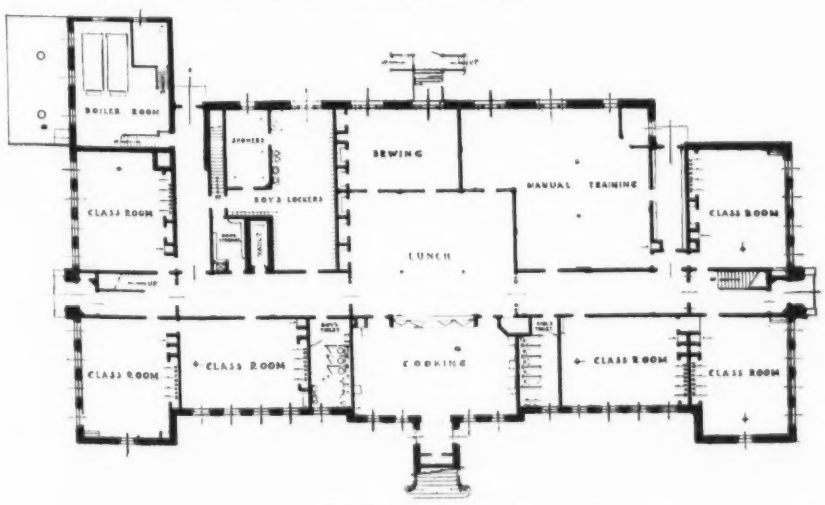
The Somersworth Senior High School provides a complete school plant for senior-high-school purposes in a community of 7,500 persons. The building is beautifully located in a residence section.

The building is 112 by 80 ft., not including the coal pocket. All classrooms are above the natural grade level. The exterior of the building is of Harvard water-struck brick, with limestone trim and cornices. The corridors, stairways, and boiler room are of fireproof construction.

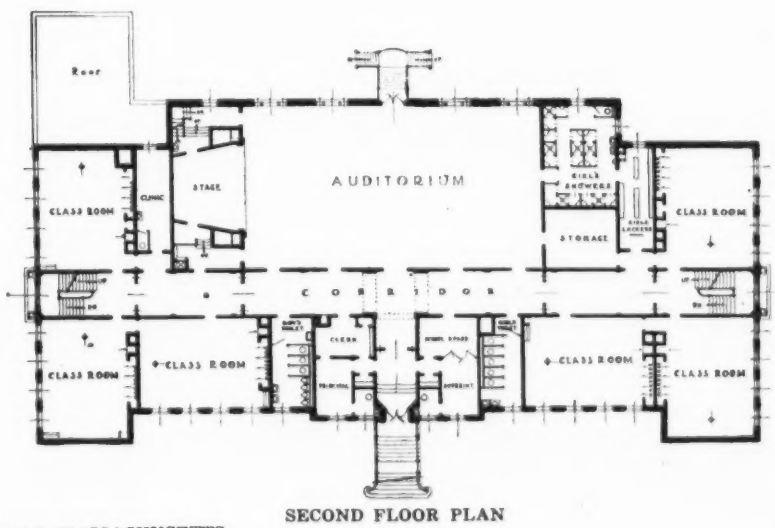
The building contains four classrooms for 40 pupils each, and one for 32 pupils, together with rooms for cooking, manual training, bookkeeping and typewriting, general science, a gymnasium and a room for chair storage, locker, shower, and toilet rooms, a principal's



THIRD FLOOR PLAN, RICHMOND SCHOOL, DANVERS, MASSACHUSETTS
Charles G. Loring, Architect, Boston, Massachusetts

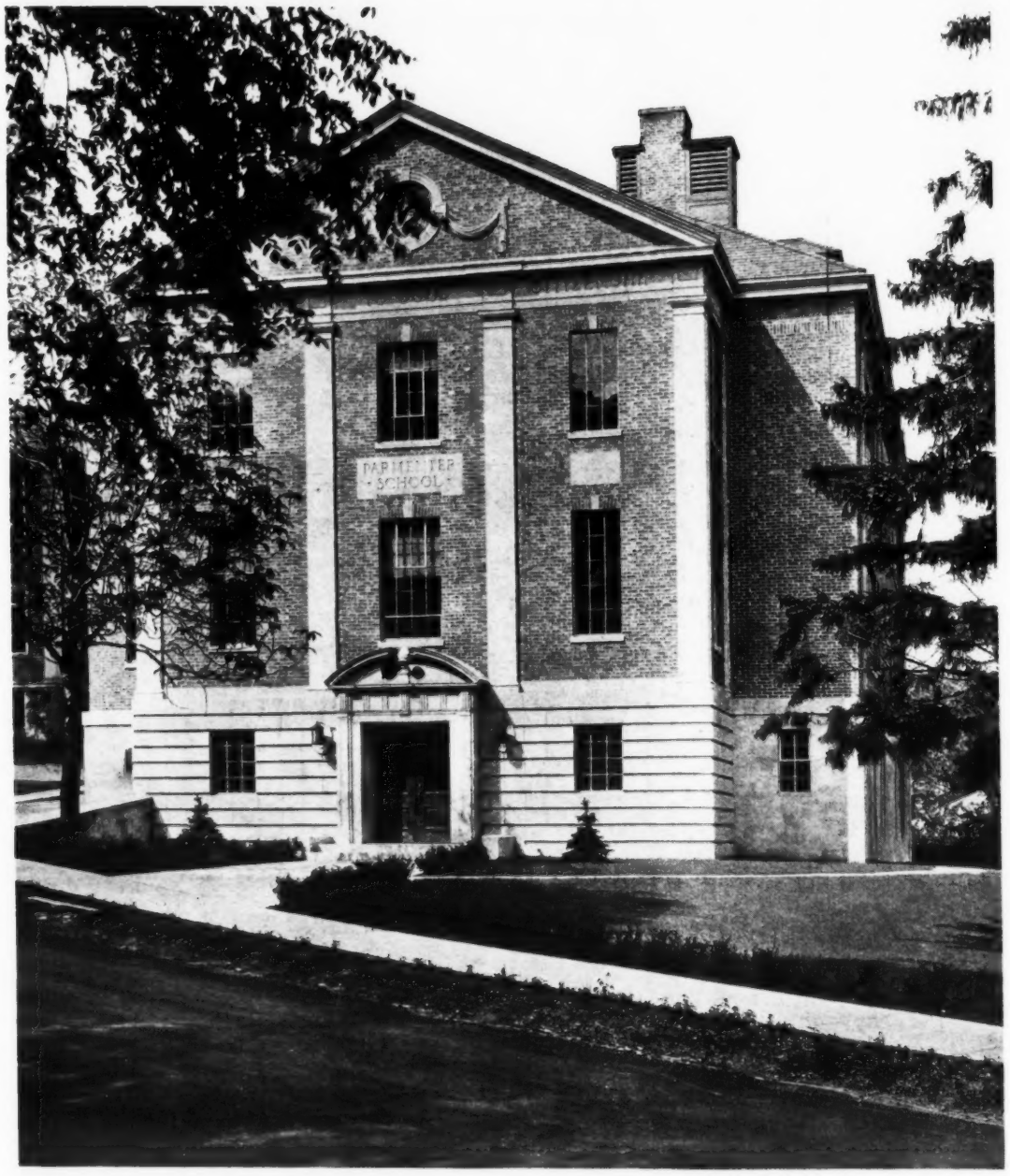


FIRST FLOOR PLAN

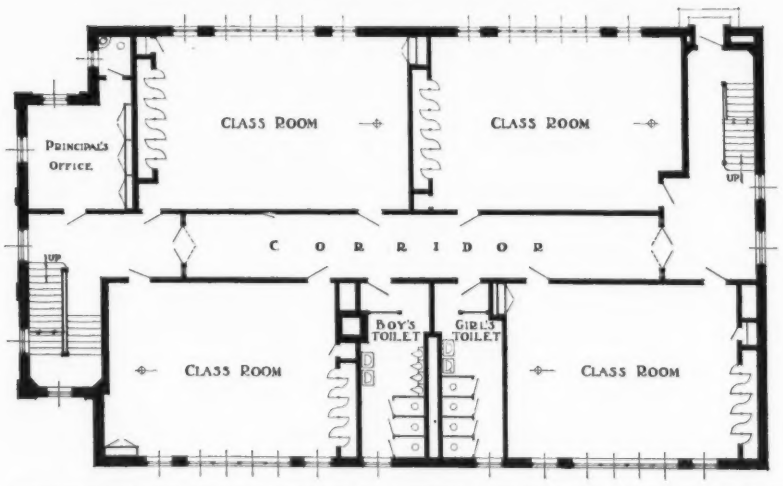


SECOND FLOOR PLAN

RICHMOND SCHOOL, DANVERS, MASSACHUSETTS
Charles G. Loring, Architect, Boston, Massachusetts



PARMENTER SCHOOL, ARLINGTON, MASSACHUSETTS
Charles G. Loring, Architect, Boston, Massachusetts



TYPICAL FLOOR PLAN, PARMENTER SCHOOL, ARLINGTON, MASSACHUSETTS
Charles G. Loring, Architect, Boston, Massachusetts

office, restrooms for teachers, an emergency room, and a boiler room with outside fuel pocket.

The building contains a total of 297,646 cu. ft. of space. The contract for the building was awarded in June, 1927, and it was completed in October, 1927.

The cost of the building, including equipment, was $118,009. The cost for the building alone was $96,802, or 32.5 cents per cubic foot. It has a capacity of 210 pupils.

The Richmond School, Danvers, Mass.

The Richmond School at Danvers, Mass., is intended at present to house 600 pupils, and while it is a complete unit, it is arranged for an addition of extensive wings at the rear. It is planned also to be one of a series of buildings to be erected in a group on the present site.

The building is 180 ft. long and 83 ft. deep, not including the outside coal pocket. All classrooms are above the natural grade level. The exterior of the building is in the colonial style, with red brick, and limestone and granite trimming, and wrought-iron railings. The corridors, stairways, and boiler room are of fireproof construction.

The building contains 17 classrooms, with a library, a lunchroom, an auditorium-gymnasium with a capacity of 700, rooms for sewing, cooking, manual training, and drawing, locker, and shower rooms for boys and girls, offices for the principal and superintendent, a janitor's room, and an outside coal pocket.

The building contains a total of 585,000 cu. ft. of space. The cost of the building complete, with electrical system, grading, walks, and drives, was $214,240, or 36.6 cents per cubic foot.

The Parmenter School, Arlington, Mass.

The Parmenter School on Irving Street, Arlington, Mass., is planned primarily to give relief to an older school building on the same lot. It is used for the upper elementary grades and has a seating capacity of 300 pupils.

The building which has a frontage of 56 ft. and a depth of 96 ft., is set on a steep, sloping bit of land so that one portion of the basement is entirely above grade, while the rear is unexcavated.

The exterior of the building is in the Georgian style, with red brick walls, and cast-stone trimming. All of the windows, the exterior walls, the walls of the corridors, the stairs and stairways, and the floors are of fireproof construction. The roof is of slate.

The building contains 4 standard classrooms for 40 pupils each, and 4 for 35 pupils each. A principal's office, a teachers' room, separate toilets for boys and girls, a gymnasium, a storeroom, an assembly hall seating 300 persons, and space for the heating and ventilating groups are to be found in the building.

The classrooms, the assembly hall, and the gymnasium are equipped with unit heating and ventilating apparatus. The corridors have direct steam radiation.

The building contains 226,114 cu. ft. of space, and was erected during the spring and summer of 1926, at a cost of $103,560. Without furnishings, the cost was 45 cents per cubic foot.

SUGGESTIONS GOVERNING THE CONDUCT OF FIRE DRILLS

At a recent meeting of the elementary-school principals of Sioux City, Iowa, the subject of fire drills was taken up in connection with the observance of fire prevention week. As a result of the discussion, a number of pertinent points were stressed as important in the systematic conduct of fire drills in the schools. Among these are the following suggestions:

1. The teacher should carry the responsibility of her room in all fire drills. In case she assigns the responsibility to pupils, she is still responsible to see that every pupil carries out his or her part in the work.

2. No teacher should be relieved of the responsibility of checking over all her pupils, and of knowing that each and every one is out of the building. The particular method of checking should be left to her discretion.

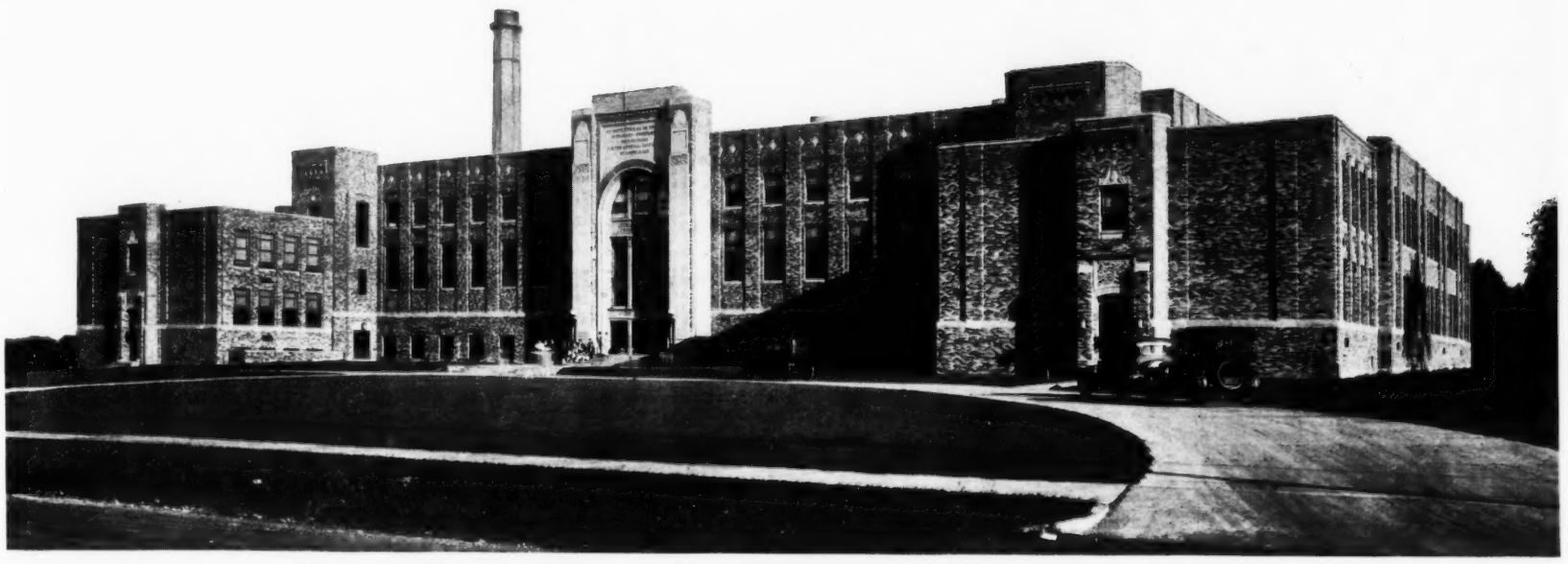
3. As a special precaution, children should go far enough away from the building so that they will be perfectly safe if an emergency occurs, and so that they will give ample room for the fire apparatus and firemen.

4. The principals are urged to call a number of fire drills while the pupils are in the assembly room. This is necessary, since it is impossible to determine the hour of the day in which fires occur.

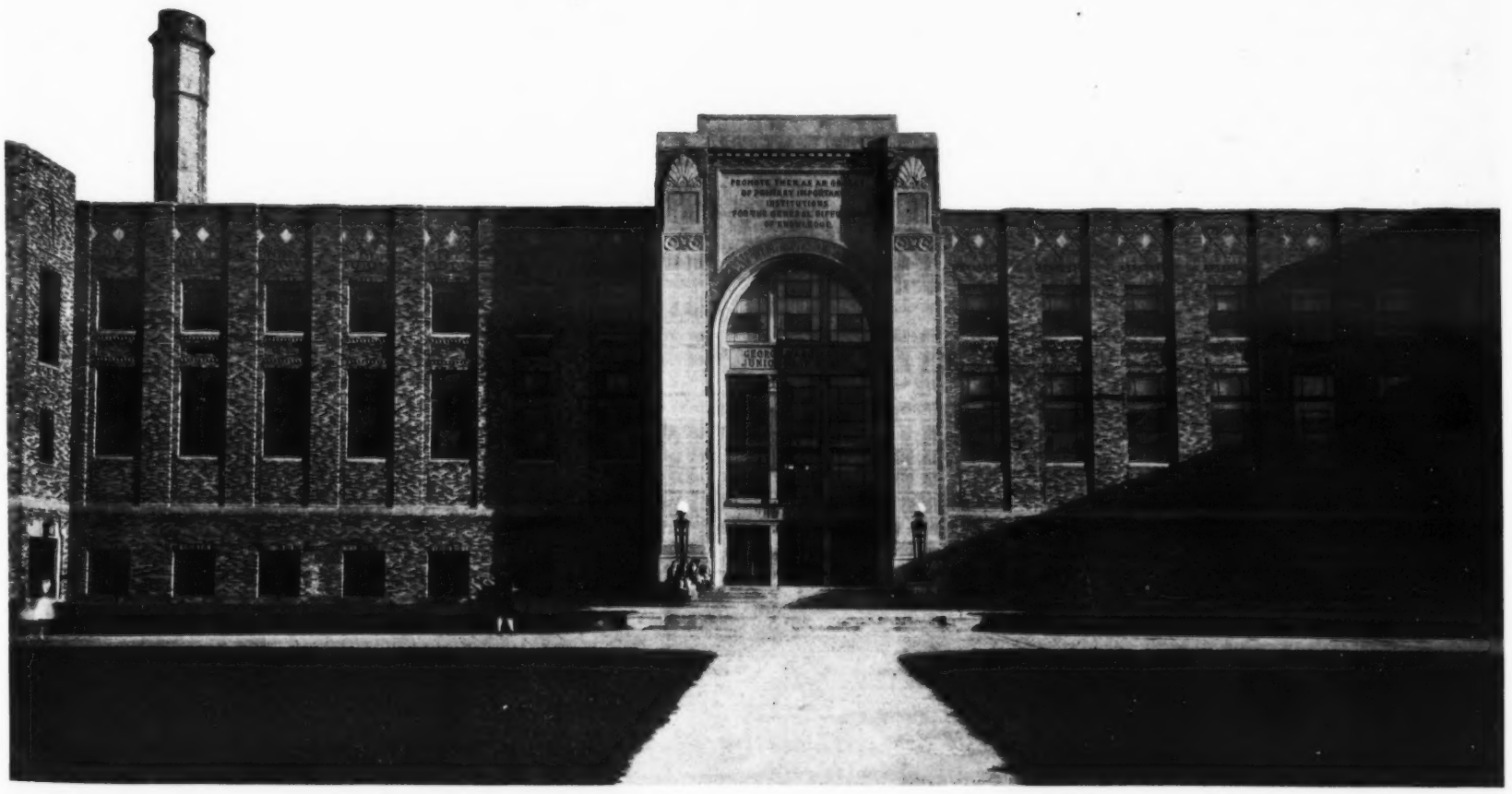
5. The principals should study their particular buildings and should, from time to time, conduct fire drills through different parts of the building so that pupils will know how to conduct themselves, if any portion of the building is barred from fire use. In some buildings, it is advisable that teachers be stationed at the bottom of the stairways to look after pupils who may trip or fall.

6. The general use of the fire escape is a questionable procedure. They should not be used, unless (1) The fire escape comes all the way to the ground; (2) Its entrance is not over a windowsill; (3) The principal has satisfied himself that it is in every way a safe way of exit. Fire escapes are intended for use when the regular means of egress are cut off.

—The schools of Washington, D. C., reported a total enrollment of 67,756 students for the opening of the fall term. A total of 45,950 white pupils were enrolled on the first day of the 1930 school year, while 21,806 were entered in the colored schools. There was an increase of 2,404 in the schools of the first nine divisions, housing the white pupils, and an increase over last year's first day enrollment of 2,224 in the schools of divisions ten to thirteen. The enrollment represented an increase of 4,628 pupils, as compared with a normal annual increase of 1,500 pupils.



GEORGE WASHINGTON JUNIOR HIGH SCHOOL, NEW CASTLE, PENNSYLVANIA
Albert L. Thayer, Architect, New Castle, Pennsylvania



GEORGE WASHINGTON JUNIOR HIGH SCHOOL, NEW CASTLE, PENNSYLVANIA
Albert L. Thayer, Architect, New Castle, Pennsylvania

THE GEORGE WASHINGTON JUNIOR HIGH SCHOOL, NEW CASTLE, PENNSYLVANIA

The George Washington Junior High School, at New Castle, Pa., is a modern educational plant, which has been carefully designed to meet the purpose of a well rounded junior-high-school program. The superintendent of schools and the members of the school board studied the design and arrangement of a number of junior high schools in different parts of the country, so that the building represents the results of a study of local needs and of the best practice in the United States. The plans and specifications had the approval of the state education department, the state art commission, and the U. S. Bureau of Education at Washington.

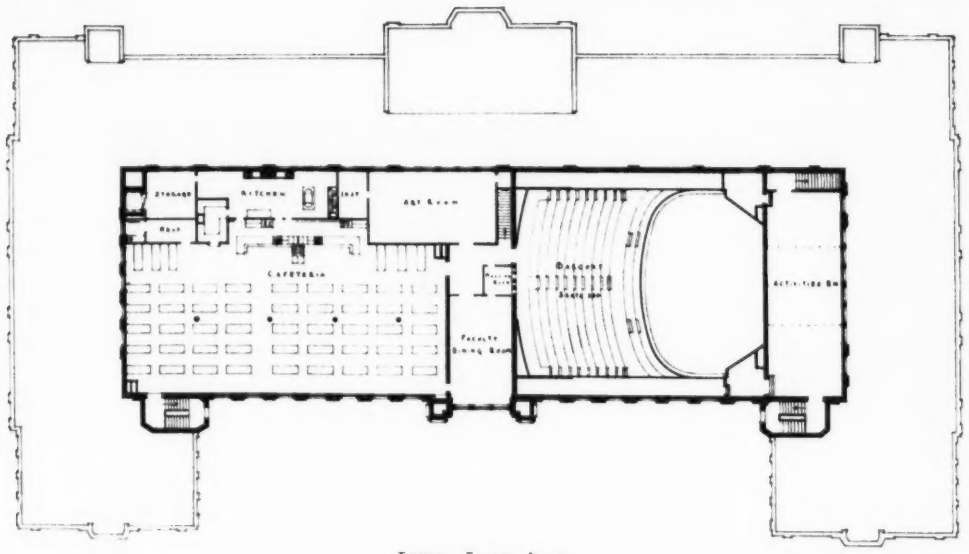
The building which is three stories in height, is located on a site of twelve acres. In addition to 32 classrooms, it contains an auditorium, two gymnasiums, a cafeteria, an art room, a library, a medical and dental room, shops for the various practical subjects, restrooms, and offices. The auditorium has a capacity of 1,000 persons, the swimming pool accommodates 250 persons, and the gymnasiums take care of 1,000 persons.

The building is constructed of steel and concrete, with exterior facing of light brick, and limestone trimming. The corridors and stairways have terrazzo floors; the auditorium has a mastic floor; the classroom floors are covered with linoleum, and the gymnasium has a maple floor. The toilet rooms have terrazzo floors and marble finish.

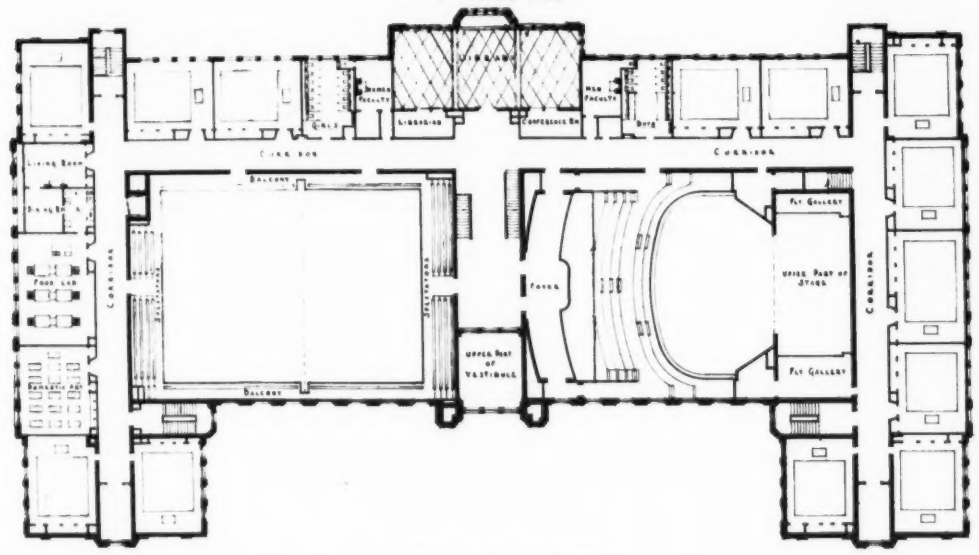
The building is heated by steam. The boilers are equipped with automatic stokers, and the entire system is controlled by automatic temperature regulators. Univents provide fresh air.

The building which has a capacity of 1,000 to 1,200 students, was completed at a cost of $565,000, or 29 cents a cubic foot.

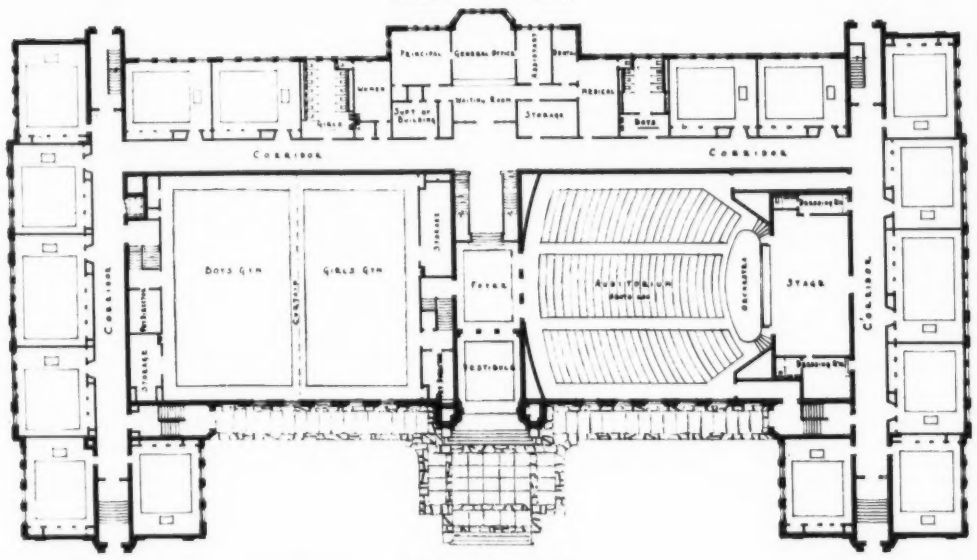
It was planned and erected under the supervision of Mr. A. L. Thayer, architect, of New Castle, Pa.



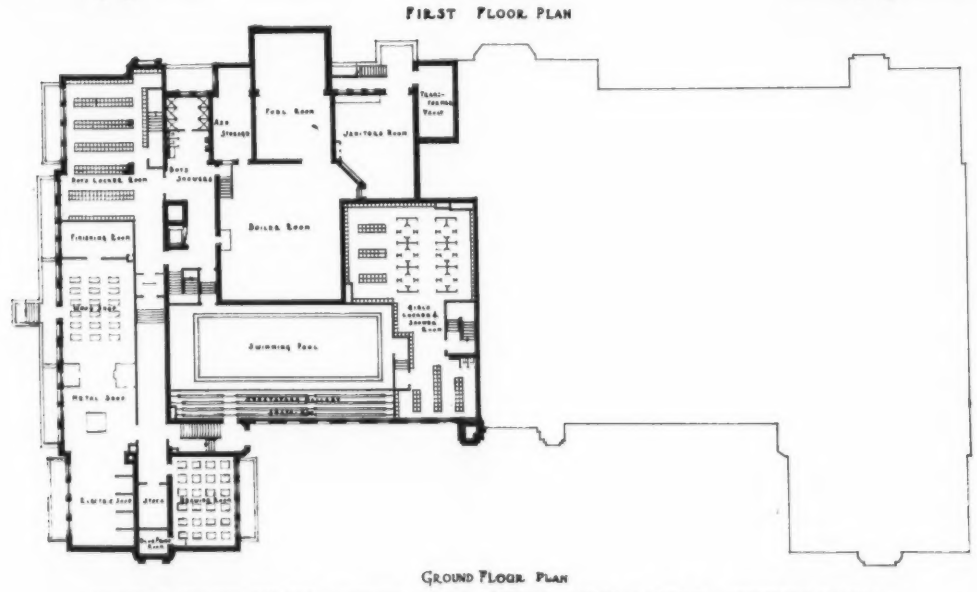
THIRD FLOOR PLAN



SECOND FLOOR PLAN

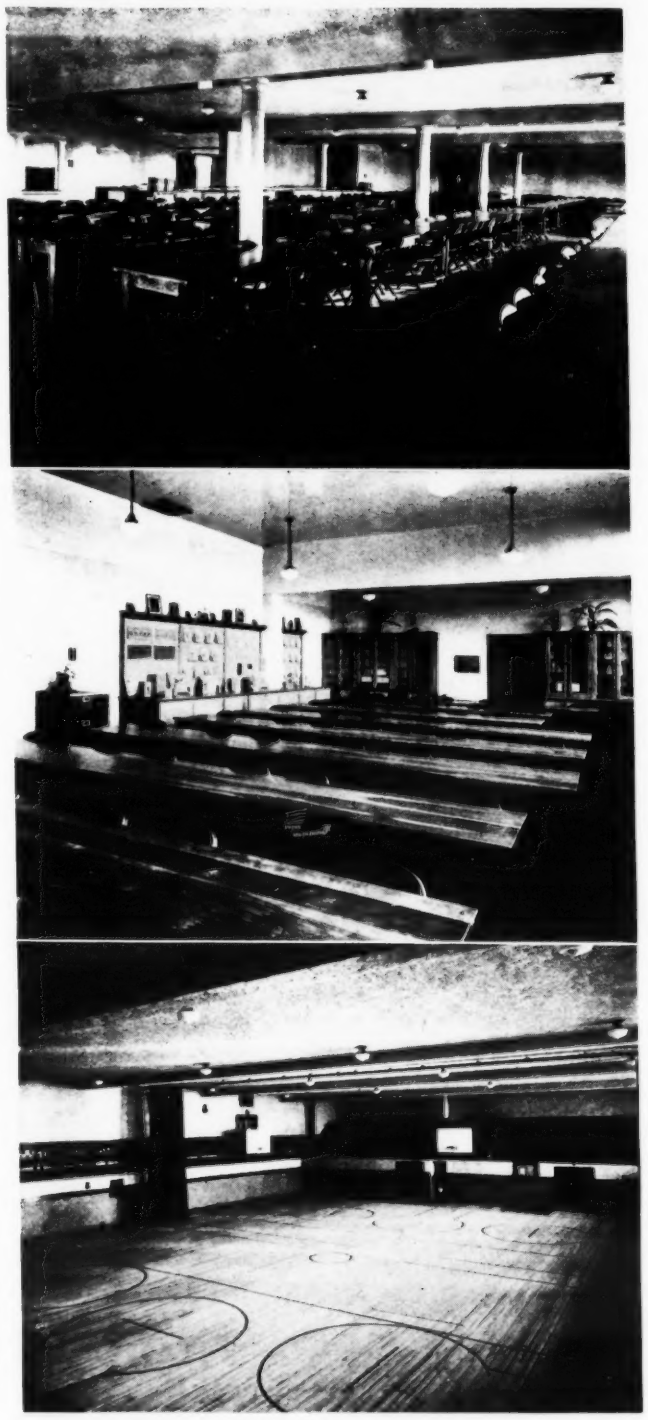


FIRST FLOOR PLAN



GROUND FLOOR PLAN

GEORGE WASHINGTON JUNIOR HIGH SCHOOL, NEW CASTLE, PENNSYLVANIA
Albert L. Thayer, Architect, New Castle, Pennsylvania



INTERIOR VIEWS OF THE GEORGE WASHINGTON JUNIOR HIGH SCHOOL, NEW CASTLE, PENNSYLVANIA
Albert L. Thayer, Architect, New Castle, Pennsylvania
TOP, Cafeteria; CENTER, Sewing Room;
BOTTOM, Gymnasium.

Construction Data

Site

Dimensions	Twelve acres
Principal frontage	South
Number of classrooms	32
Commercial department	2
Laboratories	1
Library	3
Commercial art	1
Offices	3
Music	1
Medical suite	2
Restrooms	2
Gymnasiums	40 by 60 ft.
Swimming pool	20 by 60 ft.

Design and Construction

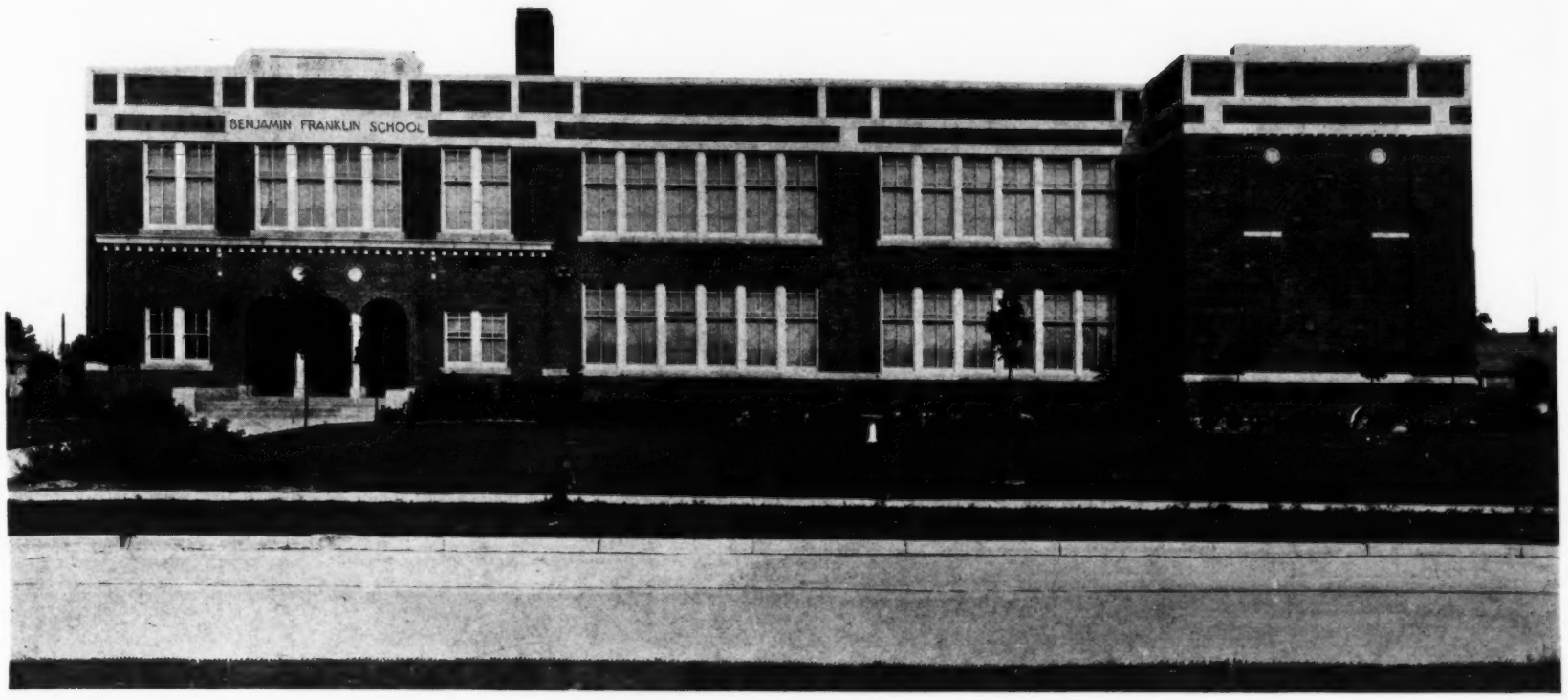
Exterior design	Modern
Exterior facing	Light brick
Exterior trimming	Limestone
Construction	Steel and concrete
Corridor and stair finish	Terrazzo
Auditorium finish	Mastic
Gymnasium finish	Maple
Toilet rooms finish	Terrazzo and marble

Heating and Ventilation

Type of heating and ventilation	Steam and unit ventilators

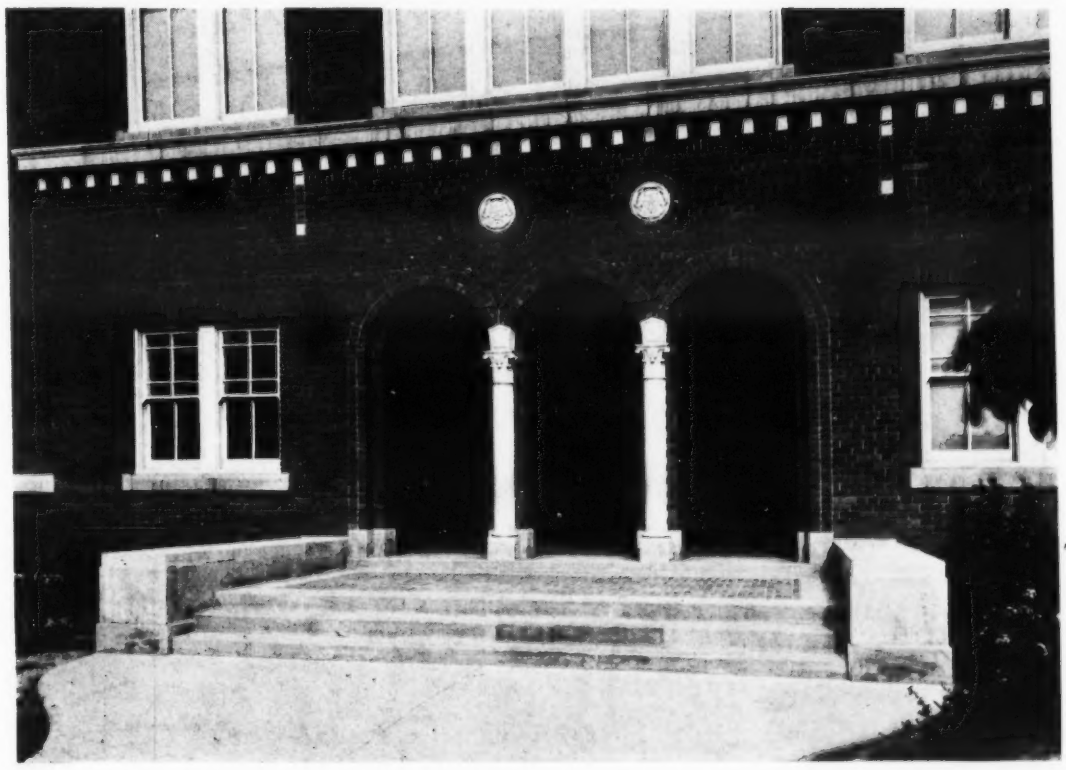
Cost and Pupil Capacity

Pupil capacity of building	1,000–1,200
Cost of building	$565,000
Cost per cubic foot	29 cents



THE BENJAMIN FRANKLIN SCHOOL, ROYAL OAK, MICHIGAN
Frederick D. Madison, Architect, Royal Oak, Michigan

FLOOR PLANS OF THE BENJAMIN FRANKLIN SCHOOL, ROYAL OAK, MICHIGAN
F. D. Madison, Architect



ENTRANCE DETAILS, BENJAMIN FRANKLIN SCHOOL, ROYAL OAK, MICHIGAN
Frederick D. Madison, Architect, Royal Oak, Michigan

A CORRIDOR-VENTED SCHOOLHOUSE
The Benjamin Franklin School at Royal Oak, Michigan

The Benjamin Franklin School at Royal Oak, Mich., contains a number of departures from commonly accepted practice in school planning and equipment. Perhaps the most interesting feature is the corridor venting by which all unnecessary dusts and flues are eliminated and the corridors carry off the classroom air.

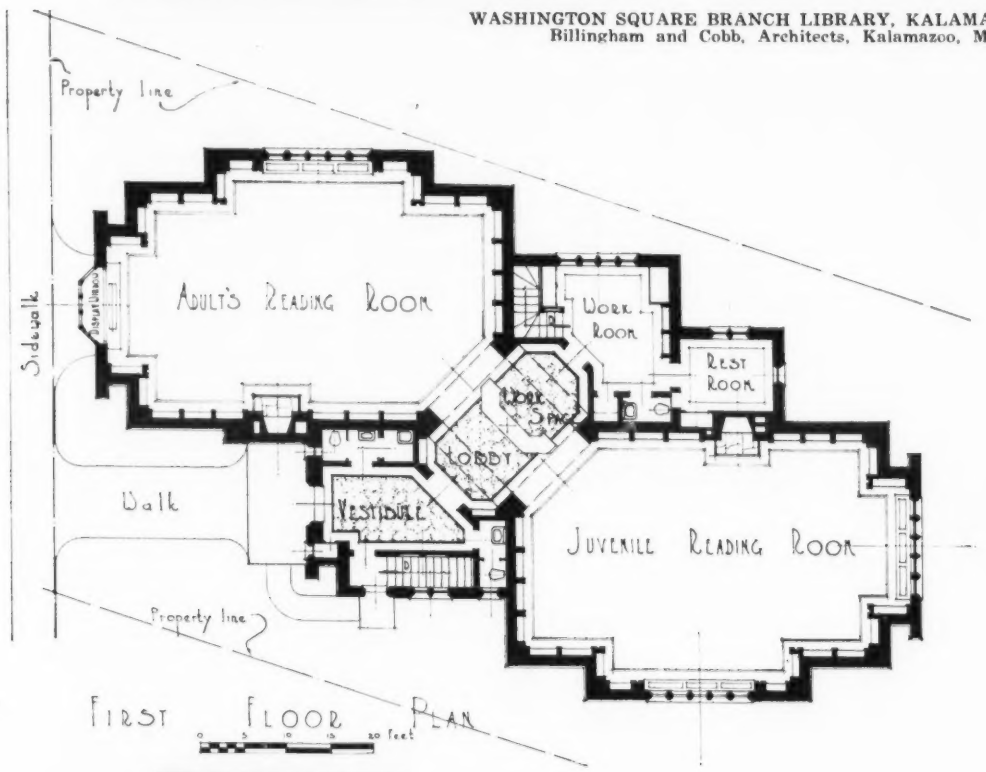
The building is an elementary school, containing nine standard classrooms, a kindergarten, an office for the principal, a combined auditorium-gymnasium (44 by 68 ft.), a library, a principal's office, a large indoor playroom (29 by 48 ft.), a health-clinic room, toilets for boys and girls, and boiler and fuel rooms.

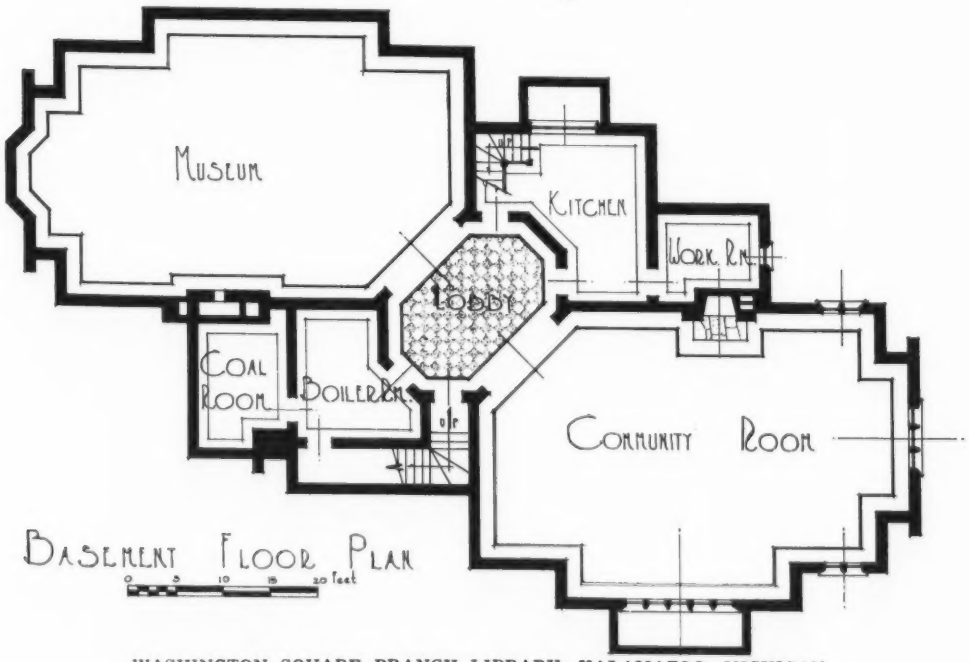
The building is located in a high-class residential suburb and the exterior has been designed to harmonize with the surroundings. Red brick and Indiana limestone has been used with interesting effect.

In the construction, permanent fireproof materials have been used; the walls are of concrete and tile, and the supporting columns and floors are of reinforced concrete. The corridors have terrazzo floors, brick wainscoting, and plastered walls and ceilings; the classrooms have plastered walls and ceilings, and hard-maple floors; the toilets have terrazzo floors, marble wainscoting and toilet partitions. The wood trim throughout the building is oak.

(Concluded on Page 146)

WASHINGTON SQUARE BRANCH LIBRARY, KALAMAZOO, MICHIGAN
Billingham and Cobb, Architects, Kalamazoo, Michigan



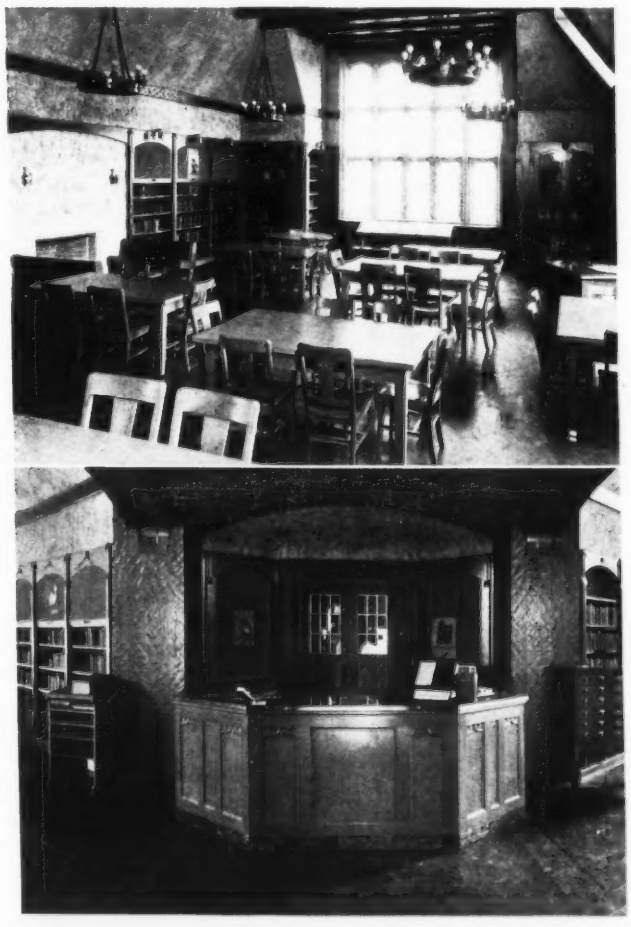


WASHINGTON SQUARE BRANCH LIBRARY, KALAMAZOO, MICHIGAN
Billingham and Cobb, Architects, Kalamazoo, Michigan

AN INTERESTING BRANCH LIBRARY

For obvious reasons of economy and efficiency, architects insist upon the purchase of regular-shaped building plots and prefer to design public buildings of conventional types, square or rectangular outline. And still all skillful architects welcome the occasional necessity of using a diagonal or odd-shaped lot and of developing a plan of maximum efficiency in which the very irregularities themselves contribute to the interest and charm of the building exterior and require ingenious solutions of necessities and conveniences, lighting, orientation, etc.

(Concluded on Page 146)



INTERIOR VIEWS OF THE WASHINGTON SQUARE BRANCH LIBRARY, KALAMAZOO, MICHIGAN
Billingham and Cobb, Architects, Kalamazoo, Michigan

The Elementary-School Principal and His Job

W. J. Klopp, M.A., Ph.D., Director of Teaching, Woodrow Wilson High School, Long Beach, California

Professional activities of elementary-school principals have been defined and evaluated for a decade. Apparently no attempt has been made to determine the nature and character of their activities, and no adequate studies have been made to throw any light on the problem of effecting an intraschool organization for the delegation of those many duties which appear to occupy the time of the elementary-school administrators, and which hinder the initiation of a program for the improvement of teaching.

In 1921, Worth McClure made a study of the activities of 43 elementary-school principals in Seattle,[1] in which he established certain relative values assigned to five major functions of the elementary-school principals based upon the judgments of university professors and public-school administrators. The study failed to suggest relief to the principals, already overburdened with administrative details, who were conscious of the need of improving teaching, and promoting more effectively the learning activities.

A few years ago the writer undertook the task of classifying 48 specific activities, most common in the experience of the elementary-school principals, under five major heads, as follows:

I. CLASSIFICATION OF THE ACTIVITIES OF ELEMENTARY-SCHOOL PRINCIPALS

I. *Constructive organization and administration*—those activities which must be preceded and directed by purposeful thought:
- 1. Selection and placement of staff
- 2. Organization of the school program
  - *a*) For the child population:
    - (1) In groups of classrooms
    - (2) In gymnasium or on playground
    - (3) In auditorium
  - *b*) For the adult population:
    - (1) Nursery and training in care of children
    - (2) Day and evening instruction
    - (3) Community-center activities
    - (4) Parent-teacher association
- 3. Placement of new and transferred pupils
- 4. Organization of fire drills
- 5. Requisitions for supplies, equipment, and repairs
- 6. Organization of custodian work
  - *a*) Physical equipment
  - *b*) Sanitation activities
- 7. Organization of office and clerical work
- 8. Cafeteria, lunchroom
- 9. Development of esprit de corps

II. *Routine administration*—those activities previously determined and their method of procedure indicated by superintendent, principal, or others:
- 1. School records
- 2. Attendance, transfers, permits
- 3. Reports and teachers' ratings
- 4. Fire drill
- 5. Receiving of patrons and adjustment of difficulties
- 6. Answering school mail and telephone
- 7. Receiving and distributing supplies
- 8. Inspection tours
- 9. Announcements

III. *Improvement of the learning activities:*
- 1. Conducting teachers' meetings
- 2. Work with individual teachers and groups of teachers and with children
- 3. Interpretation and adaptation of course of study
- 4. Conducting scientific tests and measurements and diagnosing pupil difficulties
- 5. Cooperating with teachers in the solution of problems
- 6. Selecting and providing supplementary materials
- 7. Providing for special aid from supervisors
- 8. Arranging for interchange of visits among teachers within the school

IV. *Imperative, temporary, or emergency problems*—problems which were not foreseen at the beginning of the school year and which take precedence over scheduled activities:
- 1. Situations demanding immediate attention:
  - *a*) Host to school officials, distinguished visitors, etc.
  - *b*) Provision for work of absent teachers
  - *c*) Emergency health and pupil-welfare problems
  - *d*) Discipline problems
  - *e*) Problems in construction of a new building
- 2. Problems which require early consideration, but some discretion may be exercised by the principal as to time of consideration:
  - *a*) Truancy
  - *b*) Special campaigns
  - *c*) Observation of special days
  - *d*) Junior Red-Cross work
  - *e*) Special pupil and family needs
  - *f*) Coordination of outside agencies

V. *Professional and social-welfare activities:*
- 1. Faculty luncheons and other informal gatherings
- 2. Professional groups and community work
- 3. Professional reading and study
- 4. Social community-welfare activities

This classification was then used by 40 elementary-school principals as a basis for keeping a daily diary between the hours of 8 a.m. and 3 p.m., in which each activity, and the time devoted to it, was recorded.

A total of 279 diaries were submitted for evaluation on the basis of the classification, with the result that the average amount of time in per cent, devoted to each of the five major activities by all the principals reporting, was as follows:

1. Constructive organization and administration	24.2
2. Routine administration	30.1
3. Improvement of the learning activities	24.4
4. Imperative, Temporary, or Emergency problems	19.3
5. Professional training and social welfare	2.0

The range in per cent of time devoted to each of the five major activities by all the principals was as follows:

	Range in Per Cent	
1. Constructive organization and administration	10.9	53.6
2. Routine administration	18.4	47.9
3. Improvement of the learning activities	10.2	41.1
4. Imperative, temporary, or emergency problems	4.5	33.5
5. Professional training and social welfare	.0	7.6

An average of 2.9 hours a day were devoted to routine activities while only approximately 1.4 hours daily were devoted to the improvement of the learning activities, less than half the time devoted to office routine.

The following shows the distribution of time devoted to the more important items of each of the five major groups of activities:

TABLE II

Average Percentage of Time Devoted to Several of the More Important Activities Under Each Major Activity

	Average Percentage of Time
Constructive organization and administration:	*24.3*
Organization of the school program	49.4
Placement of new and transferred pupils	19.1
Organization of office and clerical work	5.5
Development of esprit de corps	11.2
Routine administration:	*31.1*
Receiving and distributing supplies	7.9
Answering school mail and telephone	29.8
Receiving of patrons and adjustment of difficulties	13.3
Inspection tours	27.3
Improvement of the learning activities:	*24.4*
Conducting teachers' meetings	9.2
Working with individual teachers and groups of teachers and with children	53.4
Conducting scientific tests and measurements and diagnosing pupil difficulties	10.8
Cooperating with teachers in the solution of problems	23.7
Selecting and providing supplementary materials	2.4
Imperative, temporary, or emergency problems:	*19.3*
Situations demanding immediate attention	66.0
Problems which require early consideration, but some discretion may be exercised by the principal as to time of consideration	30.9

Probably the most interesting, and possibly the most astonishing, results appeared in the analysis of the emergency activities of the principals. A total of 1,185 minutes were devoted to emergency work, and in many instances the largest amount of time was devoted to the single item, "host to school officials, distinguished visitors, etc." One principal made a special note on a diary report that between 8 a.m. and 1 p.m. she officiated in the capacity of hostess to five different supervisors. The reader may draw his own conclusion as to the justification of such an emergency condition drawing on a principal's valuable time.

Activities Poorly Distributed

When the elementary school principals were divided into groups according to the size of the school, as determined by the number of teachers employed, some difference was noted with regard to the amount of time devoted to the major activities. Principals of schools with 30 or more teachers devoted more time to administration and to the improvement of the learning activities, and less to routine administration than did principals with less than 30 teachers. This was probably due to the fact that principals with 30 or more teachers had extra clerical help. The difference in the amount of time devoted to the improvement of the learning activities was so small, however, between the two groups of principals that the larger schools, with the extra clerical force, obviously were in no better position to improve their condition so far as the learning activities were concerned than were those less fortunate.

On the whole, the teachers, of all the schools represented, were given too little guidance with regard to technique in classroom procedure or the solution of pupil and teacher problems. A careful analysis of the diaries also revealed the fact that few principals entered upon their daily tasks with a definitely planned schedule for the day's procedure.

After the analysis of the diaries had been reported to the principals participating in the study, three distinct types of procedure were found vital to a constructive program for more effective functioning: (1) to effect a reorganization of the administrative program of the principal which would relieve him of many of his present duties; (2) to determine what activities could safely be delegated, and to what agents or agencies; (3) to measure the results of such a plan by securing more diaries from principals who had tried out the plans as described in (1) and (2) and to make an effort to devote the available time to the improvement of the learning activities.

A careful plan was made for the reorganization of the school so as to form a number of administrative units to which certain duties could be delegated; the duties possible of delegation were carefully listed and assigned to the several units; and the new plan was put into practice from January to June, after which the principals kept another set of diaries and submitted them for evaluation. The results were even more gratifying than was anticipated by the participating principals, in spite of the fact that the period of trial was brief.

Value of a Daily Schedule

One effective plan was adopted by all the principals to assist them in focusing their attention

[1] Worth McClure, "The Functions of the Elementary School Principal," Elementary School Journal, XXI (March).

on the learning activities, namely a plan of operation according to a carefully prepared program or schedule arranged the preceding day. Even though its provisions had to be modified in practice, it had its effect on the principals' actual schedule during the day. Both schedules were evaluated and the deviations carefully noted. Table III shows the results of the plan for a week.

A plan for delegating the duties of administration was presented to the principals. The group made definite arrangements to carry out this plan and proceeded to delegate a number of the activities listed under each of the five major groups of activities of elementary-school principals, thus securing greater freedom for constructive work in the learning activities. The plan proposed and the arguments for its adoption are as follows:

In an elementary-school organization there is ample opportunity for putting democratic principles into operation. The characteristics of democracy which are applicable here, as in other lines of activity, include a common purpose, participation by all, and a sharing in the responsibilities and results. A principal who tries to do everything himself is a poor leader. The teachers and pupils must assume some share in the responsibilities of running the school if it is to be successful. Many schools are working out such a program, and the results are indicative of what may be accomplished. The experience of a few elementary schools was found of value to the group.

TABLE III
Percentage Distribution of the Time of Ten Principals for a Week as Planned and as Carried Out.

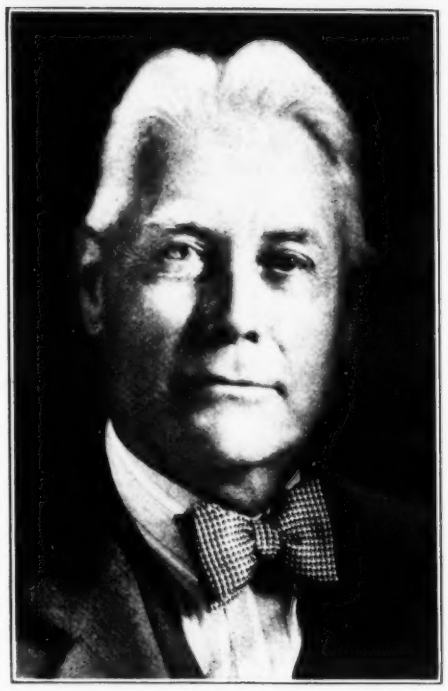
Activity	*Percentage as planned*	*Percentage as carried out*
Constructive organization and administration	17.3	19.8
Routine administration	29.2	22.1
Improvement of the learning activities	38.8	33.0
Imperative, temporary, or emergency problems	14.4	25.0
Professional and social-welfare activities	0.4	0.0

Organizing for Efficiency

In one school the teachers are organized in two ways—the faculty organization and the small-group organization. A chairman, secretary, treasurer, and a representative to the local teachers' club are elected for the year, the chairman acting as leader and the secretary attending to the correspondence and records. The representative to the teachers' club attends the meetings of that body and brings back reports to the teachers. Each teacher contributes 10 cents a month; the money collected is used for little courtesies to teachers who are ill or in trouble. Meetings are held once a month, and at these meetings policies are outlined, special topics discussed, ways and means evolved, and reports of various committees heard. These meetings cultivate a feeling of cooperation, develop an understanding of the work as a whole as well as special phases of it, and help to relate the work of an individual teacher to the work of the grades above and below.

Social events are planned occasionally—a picnic, a theater party, a dinner, or a special celebration. In this connection a room in which teachers may eat their lunches is valuable in every school. The principal should eat with the teachers for there is nothing like a "family table" to promote good feeling and fellowship.

The main work is done, however, by smaller groups. This particular school has sections—the upper grades, composed of sixth-, seventh-, and eighth-grade teachers; intermediate, composed of fourth- and fifth-grade teachers; and primary, composed of kindergarten and first-grade, second-, and third-grade teachers. Each group elects a chairman; the three chairmen



JOHN R. SARGENT,
President, Board of Education,
Topeka, Kansas

constitute a cabinet, which works closely with the principal. These representatives discuss freely the needs of the school and the reaction of the teachers to various proposals and report suggestions from their groups as to ways of improving the school.

Each chairman also looks after certain matters for her group. She takes care of common material, such as phonograph records, supplies, supplementary books, and maps. She helps in making the quarterly requisitions for supplies. For instance, the primary chairman gets a requisition from each teacher in her group for the primary supplies needed. She compiles the data, makes an estimate of the cost, confers with the principal, and fills out the official blank. When the supplies are delivered, the chairman, with the help of someone in her group, checks the invoices and delivers the materials to the various teachers.

In caring for group material, the chairman makes a schedule so that each teacher has her turn in using what she needs. In short, the chairman represents her group. She makes announcements to the members of the group, sees that substitute teachers in her group receive the courtesies of the school, and sees that teachers who are ill are remembered. When the division of work among the teachers is planned, the work of these chairmen is considered, and they are relieved from other work, such as yard duty.

In the meetings of these small groups many topics are discussed: applications of modifications of the course of study, methods of teaching, plans for assembly, special programs, and other matters pertaining to the group. The principal does not always attend the meetings, although he is usually invited; whether he is there or not, the discussion is free, spontaneous, and helpful.

Another Type of Organization

In another school the teachers were asked to indicate the lines in which they were most interested; after the replies were obtained, assignments were made. One teacher who was interested in art, took up the subject, "Art in the Schoolroom." She made a study of pictures appropriate for use, where they could be obtained, and how they should be hung. She made several plans for improving the appearance of the rooms. Her report to the teachers aroused so much interest that they came to her voluntarily and asked for suggestions in making their rooms more attractive. Others looked at their rooms with a critical eye, and the waste basket received some of the cherished accumulations.

Another teacher was interested in school lunches. She studied the subject and gave valuable suggestions as to ways in which children might be induced to buy wholesome food instead of pie, pickles, and candy. Visual aids, the library, and other work furnished subjects for this type of endeavor.

These are but a few suggestions as to ways and means of organizing the cooperation of the teachers. The feeling of responsibility for the work of the school as a whole which results is worth all the time and effort required of the principal in planning and developing the organization. Teachers are adults with minds of their own; they have abilities which will grow and expand if opportunity is given them to show what they can do. Though the principal must be the leader and the last resort in all matters, he must learn the value of cooperation if he would be truly successful.

Using Pupils to Help the Principal

There is also opportunity for democracy in pupil affairs. In one particular school the upper grades have a student council, each room electing a representative. This council has a constitution, elects officers, and appoints committees. The members were urged to be constantly on the alert for opportunities to improve the school and they discovered many things which needed correcting. Each representative discussed problems with his class teacher, led his room in the discussion of various matters, and in this way aroused public opinion. Rules were compiled by the various rooms and were cheerfully obeyed because the children understood them and had a part in their making. As the chief value of rules lies in their making, it is well not to have permanent rules, but to let new councils remake them, using or discarding the old ones as they wish.

The committees of this council have done especially fine work. Each committee has a teacher working with it, a relation which has been particularly wholesome. The nature-study committee gathers books, articles, exhibits, and pictures for the nature-study lessons each week. The pictures are placed on small portable bulletin boards which can easily be carried to the classrooms. As this material has been used extensively, it is apparent that the work of the committee has been heartily appreciated. The bulletin-board committee sees that the bulletin board in the hall contains pictures or clippings of current events or of special-day interest. The lost-and-found committee has office hours during the noon period and helps greatly with the problem with which it is concerned. The safety committee keeps zealous watch over the street crossings and over anything which jeopardizes the safety of the children. The office committee helps in the office, in classrooms, and in the yard and goes on errands when necessary. The health committee keeps watch over the sanitary conditions. The reports of all these committees are most interesting, and many of the suggestions are practical and worthy of consideration.

In another school a school city is in operation with a council, a mayor, and various commissioners. The object is the same—to help the children to have a part in the work and responsibilities of the school.

Democratic organization can be carried into the classroom proper, and ways and means can be devised which will furnish opportunities for the children to be responsible for the major portion of the details.

The following outline shows the administrative units which result from the adoption of the plan proposed.

(Concluded on Page 134)

The Hiring of Teachers in the Small School Systems

A Study Based on Minnesota Town Schools

Raldo R. Johnson, Superintendent of Schools, Minnesota Lake, Minnesota

The assumption that administrative procedures, which have been successful in large school systems, are equally adapted to the small-town school has apparently colored much educational theory, and considerable practice as well. We are all familiar with the educator, well-meaning, but lacking in a sense of proportion, who clutters a small school with an elaborately unnecessary system. We are unfortunately even more familiar with the easy-going, or perhaps bewildered, superintendent who follows no plan at all, and whose affairs are, in consequence, perpetually chaotic. Is it not as disastrous to organize elaborate means without regard to their fitness to obtain the desired end, as it is to aim at an end without devising fit measures for obtaining it?

Somewhere between the extremes will be found the skillful executive who clearly apprehends the effect he wishes to obtain and uses the simplest system to accomplish it. Since it is the chief purpose of education "to produce desirable changes in child nature," system becomes necessary only as a means to this end, and the optimum amount of system is that which exactly suffices to obtain this end, and no more.

Until recently, scientific research directed toward adequate administrative procedures has been largely limited to large cities, where well-trained executives and staffs, and adequate finances have favored experimentation, and long tenure has made possible sustained policies.

The small town has been less fortunate, for there less-trained superintendents, often burdened with a teaching load, and without a professional office staff, have wrestled with inadequate finances and antiquated ideas of the proper relation of school board and executive. Lacking reliable criteria for the organization of the small school, procedures from large cities have frequently been carried over almost unchanged. Although many factors in educational administration apparently are constant in all sizes of schools, others seem to vary greatly. An attempt to carry over procedures suited to large systems into smaller ones for which they are unsuited, obviously results in cumbrous and wasteful methods.

Such conditions suggest that the small school is entitled to research into its characteristic conditions and problems as well as is the large system. It is encouraging to note that, with the gradual raising of standards in the small schools, more research into their peculiar problems is being carried on.

The hiring of teachers, one of the major problems of the school executive, is an example of an administrative function, whose theory has been carried over from large to small schools without adequate analysis to determine the legitimacy of the transfer. The problem is the more difficult and deceptive, because many factors are properly dealt with in the same manner in large and small schools, while others seem to need very different treatment.

It is not our purpose here to evolve an adequate teacher-hiring procedure equally applicable to all small schools, even supposing such a thing possible. We will limit ourselves to furnishing a general picture of the actual practice of teacher hiring as carried on in a typical middle-western state, Minnesota, in the hope that it may indicate some of the outstanding problems, and that the procedure of other executives may point the direction in which the solution lies.

To obtain an idea of the general practice in the small towns of Minnesota, a questionnaire was addressed by the writer in January, 1926, to the 612 schools which, in 1925, made up the classified list of towns of less than 5,000 population. Answers were received from 359 superintendents whose schools employed two thirds of the total teachers in this type of schools. All sections of the state, as well as all types of schools, were well represented, so it is probable that a reasonably correct picture of the procedure was obtained.

Legal Controls Conditioning Teacher Hiring

The first essential to an understanding of teacher hiring is a knowledge of the legal controls determining the extent of the authority of the local school officials. Whatever other aspects of the problem are vague or subjective, we are here on definite ground, and moreover one in which practice is in accord with the best theory.

In the United States, education is a function of the state, which may exercise or delegate its powers as it pleases. Local units possess only such powers as the state has specifically given them. In Minnesota, it is the policy of the state to allow wide freedom of action to local units in all matters, save only those in which "a general uniformity is essential." Local units may hire only "duly qualified teachers" which are those holding a state certificate to teach. The qualifications for obtaining this certificate are definitely laid down by state law.

The manner of appointment is regulated as follows:[1]

Small towns have, however, by no means unanimously, followed in the wake of their larger brethren. This may be due to some extent to the inertia in following the old traditional custom by which the board sought to discharge all its functions personally. It has its logical aspect, however. The small-town situation differs from that of the city in that:

1. The tenure of the superintendent is on the average very short (2.7 years was found to be the average for Minnesota in the schools included in the present study).

2. The professional preparation of small-town superintendents is generally much less than that of the city superintendent.

3. The school board is frequently made up of members of long standing, who understand the local situation better than does the superintendent, however little they may know about the technical phases of education.

So far as we have been able to ascertain, there is no definite data to show that, under the circumstances, the teachers chosen by the superintendent were any more satisfactory than those selected by the board, or that the superintendent's task of controlling his teaching staff was rendered more difficult, although both these effects might well be expected to follow the exercise of administrative functions by the board. In the absence of proof, and of state laws or regulations covering the matter, board interference with the superintendent's administrative functions is still widespread.

To discover the extent to which small schools in Minnesota conformed to accepted standards, the superintendents were asked to give definite data as to the part each hiring authority took in teacher selection.

"School boards shall hire teachers at meetings called for that purpose. No teacher related by blood or marriage to a trustee shall be employed, except by a unanimous vote of the full board. The employment shall be by written contract signed by the teacher, and in common districts by the chairman and clerk. Such contract shall specify the time of employment and the wages per month." The local board is thus clearly responsible for hiring and contracting with teachers, provided only that they be those certified by the state.

A further and more indefinite control is exercised by the state in connection with the distribution of state aid. The law provides[2] that "the state board of education shall distribute the special state-aid fund and any other sums which may be appropriated by the state . . . in such a manner and upon such conditions as will enable school districts to perform efficiently the services required by law, and to further the educational interests of the state. To this end the said board shall have power to fix reasonable requirements for receiving and sharing in the state aid, provided that in no case shall teachers' salaries be made a requirement for such aid."

Participation of Superintendent and School Board in Teacher Selection

In the matter of selection no such definite procedure is indicated as is specified in the case of teacher certification and contracture. Hence, the selection of teachers may be delegated to others in the same way as are many other responsibilities of the board. The modern tendency is to assign legislative functions to the board, delegating its administrative powers to the superintendent. This is the practice almost universally followed in large school districts and is recommended by the majority of educators for schools of all sizes.

The process of teacher *selection* may be thought of as consisting of four phases:

a) Securing the necessary facts, and establishing of relations with available candidates.

b) Selection from available candidates of those to be recommended for appointment.

c) Official recommendation for appointment.

d) Appointment.

Teacher *hiring* would add one more step, that of "contracture."

In the following table the 359 replies received from the writer's questionnaire have been reduced to percentages showing the proportion using each type of procedure.

TABLE I. Extent of Participation of Each Authority in Each Phase of Selection

Phase	School Board	Superintendent	Board and Superintendent	Board Committee and Superintendent	Clerk and Superintendent	Clerk	Committee of Board	Total
A	.06	.80	.04	.005	.06	.03	.005	1.00
B	.08	.77	.06	.04	.03	.01	.005	.99
C	.07	.82	.02	.02	.02	.02	.010	.98
D	.66	.18	.09	.003	.02	.02	.010	.98

It is noteworthy that in approximately four fifths of the schools, the superintendent has the selection in his own hands up to the moment of final decision. Thus, the board although it makes the final decision, selects the teacher from a list approved by the superintendent. Even at that, the board alone decides in only 66 per cent of the schools, cooperating with the superintendent in 12 per cent of the cases.

[1] Laws of Minnesota Relating to the Public School System. Sec. 393

[2] Ibid. Sec. 220.

When certain types of schools in very small communities were eliminated, the superintendent's participation in the first three phases rises to about 90 per cent, and the schools in which he makes the final decision increase to about 62 per cent. The remaining cases are almost entirely those of board and superintendent cooperation.

It would seem in view of the conditions in small towns which naturally hamper the superintendent's authority, that the situation in Minnesota, conforms reasonably well with accepted theory.

In school systems of the ordinary type in the larger towns, the fact that the superintendent's authority was at the maximum, suggested that tenure in office might be the decisive factor. This view was based on the fact that the superintendent's tenure is greater in the large towns, increasing from an average of 1.6 years in the very small schools, to 3.6 years in large-town schools. To discover the effect of tenure apart from other factors, schools of approximately the same size and type were matched, one of each pair being a long tenure, and the other a short-tenure school. In phase A, that of establishing contacts, the superintendent officiated in 84 per cent of the short-tenure schools as against 100 per cent of the long-tenure systems. In phase B, that of selecting candidates for recommendation, 75 per cent of the short-tenure superintendents participated as against 87 per cent long tenure. In the matter of final decision the board was responsible in 75 per cent of both long and short-tenure schools, while the superintendent's responsibility fell from 20 to 12 per cent, as between short and long-tenure systems. The difference was due to the increase of cooperation between superintendent and board, which indicates that as the years pass the hiring authorities learn to work together, and suggests that schools are losing considerable efficiency by a constant procession of short-tenure superintendents. The fact that the large systems where the best superintendents may presumably be found are also the ones where the superintendent's authority is at a maximum, may also show that the superintendent receives power in proportion as the board believes him worthy of it. If so, the best way to assure the superintendent his professional rights is to improve the superintendent, and to exercise care in the choice of a school board.

As to the desirability of investing the superintendent with administrative duties and limiting the board to legislative functions, the questionnaire did not indicate that the small size of a system justified a decrease in the powers of the superintendent, at least until schools of the smallest size and simplest organization were reached. Even there the question is decidedly debatable. The factors favoring increased board prerogatives are mostly due to hiring poorly-prepared, inferior superintendents, and changing them too often. Any board which realizes the importance of obtaining a competent superintendent and making it worth while for him to remain, may have a man to whom it may intrust the teacher-hiring duty in its entirety. When better superintendents become available, and smaller school systems demand them then may we expect the smaller communities to line up with the larger towns in their recognition of the superintendent's professional status.

Rehiring of the Teaching Staff

No teacher may be elected for a term of more than one year, according to Minnesota law.[3] Hence for weeks, or even months, during the period from January to September, the hiring authorities are busy reconstructing their teaching staff, and the teachers are taking valuable time and energy from their duties to locate advantageously.

[3]Ibid. Sec. 393 p. 103.

MR. H. A. SAWYER,
Business Manager of the Board of Education,
Piedmont, California

Mr. Sawyer, who was recently appointed assistant superintendent in charge of the business affairs of the board of education of Piedmont, Calif., has had considerable experience as a business manager both in rural districts and in city school systems, and his experience had given him opportunity to observe school business affairs at first hand.

Mr. Sawyer was educated in the schools of California and received two degrees from the State University. He has also completed his graduate work in the medical and educational departments.

Mr. Sawyer's business experience was obtained largely in government offices, and as owner and manager of a dairy plant in California. He was a high-school teacher and principal for five years, was business manager of the Berkeley schools, and vice-principal of the Berkeley Evening High School. He had held the position of business manager at Berkeley for three years before going to Piedmont.

According to 249 answers to the questionnaire, members of the present staff were rehired between February 1 and June 15. Fifty per cent of the rehiring was done by March 31, and 83 per cent between March 1 and May 1. The incidence of Easter vacation has considerable effect on the date of issuance of contracts, as many superintendents report that they give contracts just before the vacation and demanded their return soon after school resumes. The size of school also affects the date of rehiring, as schools of over 25 teachers rehire earlier than those of less than 25. Large schools have 67 per cent of their rehiring done by April 1, while small schools have only 43 per cent. The mode is March 1–15 for large schools, and April 1–15 for small ones.

Naturally, teachers desire to be allowed time "to look around" before returning contracts, and in this matter there is a wide diversity of usage, varying from "none" to "as much time as the teacher desires." The mode is two weeks, 33 per cent allowing this period. Twenty per cent allow 10 days or less, while 25 per cent allow a month, and 11 per cent allow "as much time as the teacher desires." Nine per cent have no definite usage.

In both date of rehiring and time of return of contracts, large schools show more standardized practice than do small schools, as might be expected. When but few teachers are to be dealt with the relation is a more personal one and treatment can be varied to suit the case. Set standards such as are necessary in larger schools are unnecessary, difficult to maintain, and even prejudicial to the desired results in some cases.

Establishing Contact and Obtaining Information Concerning Teachers

During the year 1924–25 the teacher turnover was 37.0 per cent. Thus the average superintendent was obliged to replace three eighths of his teaching force. This is practically the same as the turnover of 39.9 per cent found by White[4] for the years 1922–24 in Iowa. Eastern states, however, appear to be more fortunate, as New York had a turnover of only 17.4 per cent as reported by Elsbree[5] for the year 1924–25. As he secured data from but 68 systems in towns of less than 5,000, and found a wide range of turnover in even these it is possible that the turnover might have been large for the state as a whole. But, if there is anywhere near the wide difference in turnover between the two sections of country that Elsbree's figures imply, important differences in conditions must exist whose study might indicate methods of reducing our own turnover.

To replace these separations, the hiring authority must make contact with prospective teachers. This may be done through the state teachers' employment bureau, placement bureaus of state teachers' colleges and other colleges, including the University of Minnesota, commercial agencies, visits to other schools to seek teachers, and by applications of individual teachers. The obvious way to relieve our curiosity as to the proportion of teachers obtained from each source, would be to obtain from each agency the number of teachers placed. This proved impossible, however, as the number appears to be a trade secret, at least among the commercial agencies. Obtaining the information from the superintendents by questionnaire was easier but involved more unavoidable errors. Some superintendents could not remember the sources from which teachers were secured, others gave two or more sources for one teacher, others reported too vaguely to permit use of their data. There remained, however, 1,603 cases whose origin was definite. The sources from which they were obtained and the percentage accounted for by each source follows:

TABLE II. Sources From Which Schools Obtained Teachers in 1924–25

Agency	Per Cent
State Teachers Employment Bureau	14
State Teachers Colleges (includes University of Minnesota and all other colleges of Minnesota)	26
Private Commercial Agencies	21
Visits to Schools to Seek Teachers	4
Applications by Individual Teachers	25
Other miscellaneous methods	3
Total	99

It is impossible to say how nearly correct the superintendents' data is. It was, however, possible to check up roughly on the percentage given for the state teachers' employment bureau. This proved so nearly correct that it is probably safe to say that the remainder of the data bears a fair resemblance to the facts; the large percentage of placements through the teachers own efforts is surprising. It is the opinion of several educators experienced in teacher placement, that this is too high, on account of the fact that many teachers apply without mentioning the agency, and the subsequent receipt of credentials from the agency is overlooked by the superintendent. If it is anywhere near 25 per cent, however, it indicates a much greater chance of locating by random broadcasting of applications than was generally thought possible.

Superintendent's Procedure in Locating Teachers

We have seen that in most schools, the task of making contact with prospective teachers and securing information about them is delegated to the superintendent. How does he go about it? To locate a teacher is only too easy, but obtaining accurate and trustworthy information regarding her probable success is quite another matter. First-hand information can be obtained by a visit to the classroom, or by personal interview. If these methods are impossible, reliance must be placed upon the opinions of others in the form of recommendations and data from teachers' agencies and former employers. Teacher-application blanks filled in by the teacher herself, are another much-used source.

[4]White, Wendell, Rate and Causes of Turnover of Iowa Teachers. American School Board Journal, Dec., 1929, p. 52.

[5]Elsbree, W. S., Teacher Turnover in the Cities and Villages of New York State. Doctor's Thesis, Columbia University, 1925, pp. 30–43.

(Continued on Page 127)

Educational Specifications for School Buildings

School Business Administration—Article IV. Continued

George F. Womrath, Minneapolis

23. *What Shall Be the Capacity of Each Room?*

The superintendent should determine very definitely what shall be the capacity of each room in the building, as it is extremely important for the architect, who works according to state and city laws and ordinances as to floor space, cubic space, etc., per pupil, to know whether the classrooms are to be for 15, 25, 35, or 40 pupils.

Whether the gymnasium is to be built for classes of 50, 100, or 200 pupils.

Whether auditoriums are to seat 500, 1,000, or 2,000 pupils.

As to auditorium capacity, Mr. Arthur L. Weeks, consulting school architect and engineer, writes:

"Then the auditorium; that magnificant hall of oratory that generally is used by a few pupils for possibly one or two periods in the day, and is filled to capacity twice in the year. The day of the large auditorium for the average school has gone, and in its place has come the small auditorium seating from 400 to 700, large enough for general school purposes, ample for community use, at one third the cost of the old-time 'whole-school' assembly. This does not suggest that the value of an auditorium be minimized, or that it profitably could be omitted, but rather that the occasioned use of a large room does not justify its cost."

If "whole-school" assemblies are indispensable, what shall be done for auditoriums in schools housing 3,000, 4,000, or 5,000 pupils? There should be a limit somewhere.

The use of amplifiers, radios, and loud-speakers in each classroom, operated from the principal's office, suggests a means to address the entire school population at one time without calling auditoriums.

It is the superintendent who should decide what capacity each room shall have; and he should be so well grounded in his program that when the school is built it can be administered on the basis of the sizes of classes upon which it was designed and thereby avoid loss and waste of space.

It follows that as all subjects are not equally patronized nor furnished with the same equipment, classrooms should be of different sizes, or else there will be a great waste of space due to vacant seats in large rooms occupied by small classes, or a badly congested condition in small rooms occupied by large classes. It is the superintendent who should be held accountable for waste room space in a new school building, and not the architect.

While everyone seems to know that classrooms should be of different sizes, but few superintendents seem to really understand how to determine room sizes and how to check a program or a set of plans for economic space utilization.[1]

The architect can be held accountable for a design which wastes space that cannot be utilized for educational purposes. These are the areas on plans which are generally labeled "unassigned," "storage," and "special." The superintendent should discover these waste spaces before the final plans are approved. On the other hand, the superintendent should as carefully guard against the absence of sufficient storage space. And if the plans, when checked, show a marked lack of educational efficiency when compared with the "Candle of Efficiency," the plans should be rejected and new plans drawn.

24. *What Rooms in the Building Will Be Vacant at Any Given Time?*

This is a question of utilization and is an educational, not a business problem. It should be given careful consideration before the building plans are prepared, as the failure to economize in room space results in a needless extravagance in building construction.

The ideal administration of a building is to have every room occupied to its full seating capacity every hour of the day. This is never practical, but it is possible to utilize buildings to a far greater extent than is often found.

It is the rule, rather than the exception, to find school programs which utilize buildings only 75 per cent of their capacity. Utilization of from 60 to 70 per cent is not infrequent. Utilization up to 90 per cent is possible and desirable. Less than 90 per cent indicates either poor planning or inefficient administration.

A change in program often will increase the utilization of space in old buildings, and may avoid the building of new buildings, or additions to old buildings.

Carefully worked out programs before the building of a new schoolhouse has often resulted in a considerable reduction of rooms and of building cost. Mr. W. R. McCornack, school architect, Cleveland, Ohio, cites a case where a four-period day was lengthened to a six-period day, with the result that 30 classrooms and laboratories were built instead of 45, with a resultant saving of $110,000.

Mr. McCornack further states: "A striking illustration in industry to strengthen this point is found in the work of Mr. Gerald D. Swope, president of the General Electric Company. Before he became president, twenty-five million dollars had been appropriated for new buildings. One of Mr. Swope's first acts was to work out plans for employing the facilities of the old buildings to so much better advantage that the twenty-five-million-dollar expenditure was avoided."

25. *How Many Pupil Stations in Each Room Will Be Vacant During Each Class Period?*

Important economies in building costs will be made only by laying out a well-balanced room schedule, by avoiding excess rooms which stand idle a large part of the day, and by eliminating superfluous seating capacity which permits a large number of seats in each classroom to remain unoccupied during each class period.

The superintendent's tentative program, worked out in answering some of the preceding items, should be applied to the room schedule. This procedure will be of great aid in reducing excess rooms and seatings to a minimum.

The importance of an economic room-and-seating program becomes apparent when figuring school-construction costs. These costs should be tentatively figured *before* the building is erected, as they are no longer comparable on the basis of cubic-foot cost alone. Some of the other bases for cost comparisons are:

Cost per square foot of floor area.

Cost per classroom.

Cost per classroom equivalent, based upon the total cubage of the building divided by the cubage of a standard classroom.

Cost per teacher station.

Cost per pupil station based upon total seatings.

Cost per pupil based upon the actual number of pupils attending.

Cost per pupil on basis of actual space devoted to instructional purposes.

Percentage of total cubage devoted to noninstructional purposes and then cost per cubic foot arrived at by dividing the total cost by the cubage actually devoted to instructional purposes.

Percentage of total cubage devoted to non-instructional purposes. This includes space devoted to walls and partitions, flues, stairs and corridors, administration and accessories.

The following is taken from the Report of the Committee on School Building Measurements of the American Institute of Architects:

Cost Units

To determine educational utility of the building, obtain the cost per pupil.

To determine construction cost of building, obtain the cost per cubic foot.

The divisor to be used to determine the cost per pupil, shall be determined by the number of pupils normally accommodated in rooms designed for classes only. In arriving at the number of pupils, special rooms are to be figured at the actual number of pupils accommodated for one class period only. Auditorium or assembly rooms are to be ignored, but gymnasiums may be figured for one or two classes, as the accommodation may provide. No gymnasium, however, shall be accredited with two classes, if below 40 by 70 feet in size.

Cost per cubic foot: To obtain the cube of a school building, multiply the area of the outside of the building at the first floor level by the height of the building from 6 inches below the general basement floor to the mean height of the roof. Parapet walls, stacks, and other projections beyond the mean height of the roof, as well as balconies and porches not contributing to the actual usable floor of the building, are to be ignored.

Where portions of the building are built to different heights, each portion is to be taken as an individual unit and the rule as above applied.

A situation which quite frequently appears is as follows:

The instructional cost is mounting.

Citizens complain about the cost per pupil.

The average size of class is found to be 30 pupils.

The next year the superintendent increases the size of classes to 35 or 38 and shows an actual reduction in number of teachers and payroll budget and an easing of the pressure for new buildings.

Is the decreased cost of instruction under such circumstances comparable with that of other cities?

26. *What Shall Be the Arrangement and Equipment of the Auditorium?*

a) What shall be the capacity?
b) Shall there be a balcony?
c) Shall there be columns supporting the balcony?
d) Shall there be entrances at both ends?
e) Shall there be windows?
f) Flat or sloping floor?
g) Size and kind of seats?
h) Arrangement of seats: Straight rows or circular rows?
i) Shall seats have tablet arms?
j) Size of stage?
k) Shall stage be built and equipped for theatrical performances?
l) Shall separate heating and ventilating facilities be provided?
m) What other special features for independent use outside of regular school functions shall be provided?
n) How related to gymnasium or other rooms?
o) Equipment as to:
(1) Curtains — asbestos curtain; stage curtain
(2) Scenery

(Continued on Page 134)

[1]Special bibliography:
Housing of High-School Programs, by Paul C. Packer, Published by Bureau of Publications, Teachers College, Columbia University, New York, N. Y.
Utilization of School-Building Space, by Edgar L. Morphet, Published by Bureau of Publications, Teachers College, Columbia University, New York, N. Y.

THE AMERICAN
School Board Journal

WM. GEO. BRUCE
WM. C. BRUCE } EDITORS

EDITORIAL

THE SCHOOL BOARD AND A CRITICAL PUBLIC

The modern board of education is an accepted agency in the American scheme of government. While it functions as a local unit, it is essentially an agency of the state, and exercises given prerogatives and powers as such. While its activities are local and immediate, it is, nevertheless, a unit serving with other units of like purpose, thus piecing out a state school system into a cohesive whole.

As a public body the members of a board of education are exposed to the same criticism which other public men encounter in the course of their career. And that is only natural. The question which arises here, however, is whether such criticism is offered in the spirit of a friendly helpfulness, or with a faultfinding rancor.

The thoughtless citizen does not always discriminate between helpful criticism and harmful nagging. He becomes irritable and denunciatory without realizing that his tactics impede rather than promote desired ends and purposes. He scarcely realizes that in the scheme of things he has a part to play other than that of a noisy kicker and opponent.

The News of Ann Arbor, Mich., in discussing a local situation in which the chronic faultfinder was to the fore, recently said:

"A school board is not a group of infallible human beings. It is bound to make mistakes occasionally, but likewise its efforts are liable to be misunderstood by persons not in touch with such matters. Some criticism is justified, from time to time; some arises from misinterpretation of facts.

"The school board is not part of an autocratic system of government. Heavy responsibilities are imposed upon its members—for surely there is no heavier responsibility than the education of a community's youth—and that responsibility is conferred by the public. The actions of the board, then, are supposed to represent the public will. But there is another responsibility, and this one is carried upon the shoulders of the public. The people should cooperate with the men whom they select to direct the school administration. And part of the people's responsibility is a duty to become acquainted with school matters and make an effort to understand them, before offering criticism."

The editor who wrote the preceding paragraphs then suggests that the citizenship follow in some intelligent fashion the work done by the board of education before submitting undigested criticism. He also advances the thought that a cooperative and helpful attitude is always in order. He concludes by saying that, "It is time that the citizens paid more attention to their school board. These citizens should realize that they are forcing their representatives to carry on virtually alone, without the support of an evidenced public interest, without criticism in the place where criticism should be offered. If, at times, the school board appears to be a group of autocrats, standing aloof and directing school affairs to suit themselves, the citizens themselves are to blame. By their failure to attend meetings of the board they are making of its members a detached governmental unit, instead of permitting it to function as an instrument of the public will."

Here it does not follow that the citizens should attend board-of-education sessions. The public prints usually keep him informed as to what the school system is doing. But, it does follow that he keep himself informed in some general way as to the more important projects and departures engaged in by the local school-administrative body.

STATE SCHOOL SUPPORT AND THE SEVERANCE TAX

It is evident that the increased cost of education has strained the tax ability of various units of government throughout the country. It is equally clear that present methods of taxation do not in all instances yield the desired or even the required revenue in order to carry out comprehensive school programs. The variations in the property wealth of the several school units comprising the state have made equalization and the distribution of financial support an imperative necessity. The richer districts must come to the aid of the poorer districts.

The main burden of taxation is thrown upon property holdings. The tendency to increase this burden in order to meet present needs is beginning to meet with organized opposition. The belief that property is already bearing more than its share is gaining ground.

Thus, the discovery of new sources of tax revenues is highly desirable, providing that in tapping new sources the cause of equity and uniformity in spreading the burden over the taxable wealth and upon the earning power of man is properly served. In this connection the so-called severance tax has received consideration. It is exacted in several states. California is making a study of its feasibility.

"The severance tax," says Elmer H. Staffelbach, director of research for the educational interests of California, "is a method used by certain states to raise money for public purposes from the natural resources lying within the state, a certain percentage of the product being in each case taken by the state. Thus the tax is in the nature of a public royalty.

"Natural resources are interpreted for this purpose to include gas and oil, mining and quarry products, and other forms of valuable deposits, and virgin timber. There appears to be no reason why water power might not, under the theory, be added to the list. Agricultural products are exempted from this form of taxation.

"The severance tax is based upon the theory that such commodities as those mentioned in the foregoing, belong to all the people. Though they have been allowed to pass into private hands for the purpose of exploitation and production, they remain a part of the patrimony of the state. The state is justified in demanding that a portion of such wealth be devoted to the benefit of the general public."

The state possesses vast wealth in petroleum and other minerals. The value of the mineral production is estimated at $451,636,658, which would yield under a 1-per-cent tax the sum of four and one-half millions annually. It is contended by California educators that the tax would be eminently practical and equitable, and would go a long way toward relieving the pressure which now rests upon the school interests.

It remains to be said that a severance tax can mean but little in any state of the Union unless such state is exceptionally blessed with natural wealth in the way of mineral deposits. The states that are not so blessed must turn to other sources if the total tax revenue is to be substantially increased.

And here we hold now, as we have in the past, that the most promising solution is found in a well-graduated state income tax. This recognizes the "ability to pay" principle rather than to place further burdens upon property holdings which already bear their full share. Educators who are concerning themselves with the problem of state school support must soon or later come to the acceptance of the income-tax idea. The severance tax, in the nature of things, cannot serve all states.

THE PROBLEM OF A GROWING SCHOOL POPULATION

With the autumn opening of schools many communities throughout the country were reminded that the school population is continually growing, and that with such growth the housing problem once more comes in for consideration.

Where the schools are capable of housing an enlarged pupil constituency, no immediate concern need be felt. But where an increased attendance makes for overcrowding, the problem of more school accommodations is already at hand.

Where this situation arises it is usually found that the school authorities have full knowledge of the ratio of growth that must be reckoned with. They judge the future by the past, and know when additions to present structures, or new structures must be provided.

The problem involves many considerations and is, under certain conditions, one of the most complicated likely to arise in the school-administrative service. The financial consideration, which is first and foremost, becomes more difficult where the tax ability of the community has become strained or where the citizenship is in a mood to retrench or economize. Again, other projects of a public nature may, for the time being, claim public favor.

Where the school administrators are confronted with a constantly growing school population, they must also adjust their plans to meet the situation. And that primarily means a timely anticipation of future schoolhouse needs. In other words, it means a building program which covers a period of years and which is based upon the housing needs, immediate and prospective, that must be met.

The preliminaries in the direction of such a program include a survey which brings to the surface every factor relating to the school system as a whole. Such a survey enters minutely into the status of present schoolhousing, ratio of growth in school population, the prospect of new school-attendance areas, per capita pupil costs, and the financial ability to carry out a given school-building program.

While a sudden increase in pupil attendance at the opening of a school term is a special reminder that the population growth implies enlarged housing facilities, it follows, nevertheless, that in growing communities the timely anticipation of future needs is always in order.

HONORING MEMBERS OF BOARDS OF EDUCATION

The citizen who has served for any length of time as a member of a board of education knows that the office is not a bed of roses, and that in the course of his term of office he has been subject to some form of either private or public criticism. If he is of a sensitive nature, he may at times feel most keenly the shafts of criticism hurled at him. It takes a somewhat phlegmatic disposition to remain entirely indifferent to them.

The consciousness, however, that he is rendering an honest and worth-while service will steel the board member against adverse opinion. Everyone is subject to loose gossip, and the member of a school administrative body cannot hope to be exempt from an occasional unfair attack.

It is, therefore, gratifying to note now and then where public appreciation for the services

of a member of a board of education finds adequate expression. It comes sometimes in the nature of a resolution passed by some citizens' organization, or in the form of a newspaper editorial. And then only when the distinguished member has completed a long term of service, and has stepped down and out. Sometimes that appreciation is not expressed until he has passed out of this life. It is then that the commendation is generously even profusely extended.

It is obvious that long and distinguished service as a member of a board of education deserves the highest recognition. When it is considered that such service involves an expenditure of time, thought, and effort covering many years, it will also become evident that no form of recognition can adequately compensate it. The finest tribute that can be paid is to proclaim that he has made a contribution to the educational progress of his time, and thereby added to the well-being and perpetuity of the nation.

The instances where citizens have devoted long years to the service of the schools, come to the surface every now and then through press notices. A brief tribute is paid, and then the incident goes into the ash heap of time. It is soon forgotten.

The question which may well be raised here is whether distinguished service rendered to the cause of popular education should not also serve as an incentive to the youth that has become its beneficiary. We are in the habit of exalting the memory of distinguished warriors, statesmen, and philanthropists. Why not recognize distinguished service, in promoting the cause of popular education, rendered by a local citizen?

A case in point comes to our attention. At La Crosse, Wisconsin, a citizen named William Luening who had served on the board of education of that city for a period of thirty years, recently passed away. He was a high-class gentleman, public spirited and imbued with the spirit of service. In his local school-administrative labors and in state school-board gatherings he was always an inspiring and guiding force. The school authorities gave public expression to the fact that the community had lost its "most beloved as well as its most useful citizen."

The thought which comes to one's mind here is whether an exceptional record of service ought not to find more substantial and lasting expression, in manner that will exalt a highly useful and exemplary life and afford the lesson to the rising generation and prompt inspiration toward unselfish service and toward the finer and nobler impulses of life.

COMMON MISCONCEPTIONS REGARDING SCHOOL TEXTBOOKS

It is not claiming too much to hold that school textbooks are discussed with greater frequency than any other class of books by those who are called upon to buy and pay for them. The general charge is that schoolbooks cost too much money, that changes in textbooks are made altogether too frequent, and that the schoolbook business is a great monopoly.

Neither of these charges can be sustained. To begin with, the expenditure for textbooks constitutes only a nominal item in the total school costs. This item respresents about one and one-half per cent of the average school budget. Where schoolbooks are bought directly by parents, the cost becomes an item of family expenditure. Where the free textbook system prevails, the budget item is subjected to close public scrutiny.

The parent that is called upon from year to year to buy textbooks for his children is inclined to protest the cost without realizing that the family may engage in frivolous expenditures exceeding by far the price of schoolbooks. The politician who poses as the watchdog of the public treasury is inclined to point to exorbitant schoolbook expenditures.

It is an established fact that the modern schoolbook is cheaper than any other class of books. As a rule, it is printed on better paper, more durably bound, and marketed at a lower cost than the great run of books intended for an adult reading constituency. The fact that schoolbooks must stand the wear and tear of the youthful user has prompted the publisher to contemplate the factor of durability. The further fact that schoolbooks are annually consumed in great quantities has lowered the cost of production. The competitive attitude of several educational publishing houses has also tended to keep prices within reasonable limits.

The complaint is heard from time to time that textbook changes are engaged in with greater frequency than is really necessary. Schoolbooks have been subject to improvement like everything else. It is true that the Blue Back speller and McGuffey's readers of several decades ago have been superseded by newer and better books, but it is also true that the average life of a textbook is something like twelve years, and that the changes have not been too frequent.

The parent that is called upon to buy a third reader for his child in place of a second reader, may imagine that this is due to a textbook change. The fact that the child has passed from a lower to a higher grade may have escaped his attention. Necessarily the passing from one grade to another involves the use of different textbooks. But, this by no means implies that a change in the list of textbooks has been engaged in.

The fact remains that the textbooks found in the American schools excel in point of authorship and classroom adaptation, are attractive in style and durable in make-up, and are marketed throughout the country at a reasonable cost.

UNSEEN FACTORS IN THE SCHOOL-SUPPLY INDUSTRY

The pupil of imagination may vision in some vague manner that somewhere in this wide world a simple mechanic has constructed the desk which he is privileged to occupy. If he appreciates the graceful design embodied in the school desk, the several materials used in its construction, and the fact that a beneficient order of things has brought the equipment to his service, he will also be interested in the men that brought this about. He will wonder just what man possessed the skill and industry to design and construct the school desk.

We recently saw a trade publication which is devoted to the school-desk industry. While its pages showed interiors equipped with the seating manufactured by the concern responsible for the publication, including schools, churches, and theaters, it also presented portraits of the executives who direct the production labors.

The more interesting pictures in the publication from our point of view, were those that introduced the reader to the sturdy workmen employed in the plant. It is these men that fashion wood and iron into graceful school furniture and thus make their contribution to the progress of popular education. They are men, old and young, in the garb of workmen, cheerful and vigorous, with an expression of pride in being identified with a useful industry. It was not a mere advertising pamphlet, but a readable and instructive publication.

In another series of pictures the older men are shown with their families, the younger men in baseball suits engaged in athletic contests. A glimpse of the social side of life is afforded. There are husbands, wives, and babies, children at work and at play, young folks at social gatherings, and the like.

The publication known as "The Seater," to which we refer, might prove of great interest to the boys and girls who admire the modern classroom paraphernalia, and who have some appreciation of its purpose and value. To see the faces and figures of the factory personnel, of bright, industrious, and skillful workmen, would enable the school children to visualize the factors that serve them.

Studying an illustration of a group of workmen also inspires a respect for the dignity of labor, a lesson which sooner or later must come to every child that is intended to be reared into useful citizenship. The factory chimney assumes a new meaning; the whirr of the machine becomes music; and the toil of honest labor notes useful activity.

IS CORPORAL PUNISHMENT A THING OF THE PAST?

There was a time when the question of abolishing corporal punishment in the schools was discussed with considerable vigor throughout the country. Parents here and there not only resented the infliction of corporal punishment but resorted to the legislatures to secure its abolition and to the law courts to punish "spanking" teachers.

The courts, as a rule, have accorded to school administrators the full authority to adopt such disciplinary measures as are likely to make for the orderly and efficient conduct of the schools. It has, therefore, been entirely optional with the administrators to inflict corporal punishment or to abolish the same.

While many boards of education have forbidden corporal punishment as a matter of expediency, namely, to avoid the unpleasantries that have arisen from time to time, many more have retained the rule to be exercised in extreme cases. In many communities it has become a dead letter, but the very fact that the rule stands, has had a salutory effect upon the refractory pupil.

Where the rule is combatted by parents it frequently takes on an ugly form. A court procedure is engaged in. A teacher is placed under arrest. Cruelty is charged. The public takes sides. The press is not slow in placing the worst possible construction upon the affair. Some brutal teacher has maltreated a helpless child. The truth in nearly all such cases reveals the fact that a sound thrashing has benefited, rather than harmed the refractory pupil.

In Seattle, Wash., the question of corporal punishment has come into public discussion. A group of mothers tell how their innocent little Johnnies received an awful beating at the hands of some vicious schoolmaster. All this does not look good in print

What are the facts? To begin with the statements of child punishment are grossly exaggerated. The adage "spare the rod and spoil the child," still holds good in certain extreme cases. Superintendent T. R. Cole adds: "Indeed sometimes it's a case of spare the rod and spoil the child, not only the individual child, but the whole school." The policy of the Seattle school system has been to inflict corporal punishment where parents have failed to apply the same when really needed.

The question resolves itself, as already stated, to one of administrative expediency. If a parent constituency is opposed to the infliction of corporal punishment it must be abolished. The parents unquestionably have the final voice in the matter. On the other hand, the schools are called upon to exert discipline and decorum, and if an unruly pupil cannot be subjected to a beneficient chastisement through the means of a sound thrashing, he must be eliminated from the school. In that case the burden is thrown upon the parent. But, it does not solve the problem. The pupil must be saved against himself.

The individual board of education must determine for itself whether the abolition of corporal punishment is wise, or whether it is more expedient to hold to rules requiring such punishment. Local sentiment on the subject and local conditions must determine.

A Plan For Grade Supervision in a Small City

Frederick Leighton, Superintendent of Schools, Oswego, New York

In small cities the superintendent of schools is (sometimes) also secretary of the board of education, superintendent of buildings and grounds, purchasing agent, etc. Consequently, where there is no assistant superintendent of schools, the question of supervision of subjects in the grades becomes a local matter, which can conform to no rules of the theorist who assumes ideal conditions in large cities and almost unlimited financial resources.

The following suggestive plan is outlined for a specific city of 25,000, assessed valuation $20,000,000, with two large grade schools (grades 1 to 8) with a registration of 900 each in which the principals do no teaching; and four small grade schools (grades 1 to 5) with registrations of about 175 each, in which the principals are regular grade teachers.

In this system there is a full-time grade supervisor for grades 1 to 6, who supervises all subjects in which there is no special grade-subject supervisor. There is also a full-time drawing supervisor for grades 1 to 6. Other supervisors are regular teachers who teach most of the time, giving a minimum amount of time to supervision, most of which is done in conferences outside of regular school hours. The following high-school teachers supervise grade subjects in addition to teaching regular full-time programs in high school, for which supervision each receives only $200 annually: music, drawing, industrial arts and home economics (four teachers in all). The teacher of music in the 7th and 8th grades in each of the two large schools teaches the 7th- and 8th-grade music in her own school and supervises the music in grades 1 to 6 in her own school and in the grades in two of the smaller schools. In this way there is some unified supervision of all subjects in grades 1 to 6 and in special subjects in grades 7 to 8, the latter being tied up with the high school. The supervision of non-special subjects in grades 7 to 8 left exclusively to the school principals who do no teaching.

Suggestive functions and rules under which the above organization operates are as follows: The first duty of each of the supervisors is to see that a modern course of study is made out for her subject or subjects and that the same is revised from time to time to keep it strictly up-to-date. These courses are, of course, passed on to the superintendent for approval and to the board of education for adoption. Pending the approval of such courses, each supervisor is required to duplicate and distribute to all principals and teachers, copies of a temporary outline course to be used until final approval of permanent courses.

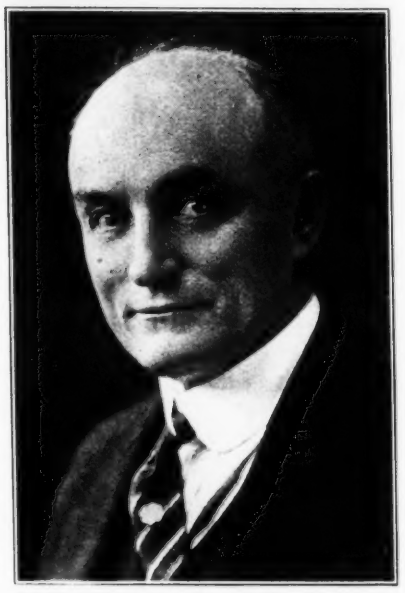
The second most important duty of the supervisor is to make certain that the approved courses are uniformly and faithfully carried out in all grades and schools. Methods of doing this vary with the different supervisors and from time to time with the same supervisor. However, one thing is insisted upon as essential: The work as outlined in the adopted course must be completed by the teacher and checked in some way by the supervisor.

The third duty of the supervisor is to assist teachers in their methods of teaching. A wide latitude may be allowed both the supervisor and the teacher in the method of teaching. If the desired results and proper development of the children are obtained, the particular method used is not important. In performing this particular duty the supervisor necessarily spends much more time with some teachers than with others.

That there may be a clear understanding on the part of the superintendent, supervisors, principals, and teachers of the rights of supervisors in dealing with principals; teachers, and pupils, the superintendent has determined the status of the supervisors as follows: The supervisor, as a direct representative of the superintendent, has the right to go at any time, without announcement or molestation, to any classroom in any school and to deal directly with the teacher and pupils in the carrying out of her program. She may take the class herself, or ask the teacher to do a certain piece of work for her, being careful, of course, not to interfere with the executive or administrative affairs of the school. Should a question as to method of teaching or the carrying out of the course of study arise between a principal or teacher and the supervisor, the supervisor must be supreme, subject, of course, to appeal to the superintendent and later to the board of education. The supervisor is required to go into each school with a spirit of cooperation and helpfulness and to work agreeably and sympathetically with the principal and teachers in carrying out her program so that it may be a part of the unity of the whole school scheme.

Supervisors have to cover such a wide field and have so little time in which to do it, that they are asked to spend all of the time they are in school during school hours in classrooms in actual contact with teachers and pupils, and to have all conferences with principals and teachers outside of regular school hours. Faithful compliance with this regulation has been found to do much to break down an altogether too common feeling on the part of teachers, that supervisors idle away some of their time during school hours in conferences which are in reality exchanges of school gossip.

From time to time the superintendent necessarily assigns to the general grade supervisor specific duties of a purely executive nature. In the performance of these duties the general grade supervisor is regarded by principals and teachers as acting instead of the superintendent and with power in these assigned premises on a par with the superintendent.



MR. E. J. FROST,
President, Board of Education,
Jackson, Michigan

Mr. Edward J. Frost, who was recently elected president of the board of education of Jackson, Mich., to succeed G. W. Scotford, has been a member of the board for the past ten years. He was elected to membership in 1919, and his present term expires in 1931.

Mr. Frost is president of the American Gear Manufacturers' Association and holds the same office in the American Drop Forge Association.

Consolation Letters From School-Board Members to Defeated Candidates

Carroll Atkinson, Pasadena City Schools

An important requisite for success in school-work is the possession of a good and well-balanced sense of humor. Many teachers and administrators pride themselves on being successful, but are in truth failing to make the proper impression upon the young lives in their charge because of this lack of the fundamental ability to laugh off disappointments and to turn apparently serious failures into mere incidents. In the ever-increasing competition for administrative positions, the man who will be the greatest success in the long run is that man who can lose in his initial efforts to become an administrator, can laugh at and learn from his mistakes made in applying for positions, and can come back all the harder after the next place he wants, until he gets what he is after.

In a recent issue of the JOURNAL,[1] readers have laughed at the breezy correspondence between the clerk and an applicant for a Montana school superintendency and also at some masterpieces of application letters[2] in which the applicant has gone off the beaten trail in writing to make the necessary impression to land the position. A third and slightly different humorous angle is given by letters of "consolation" written by board members to unsuccessful candidates. Fictitious names are substituted in order to save feelings, but these letters are nevertheless bona fide.

[1]December, 1928.
[2]June, 1929.

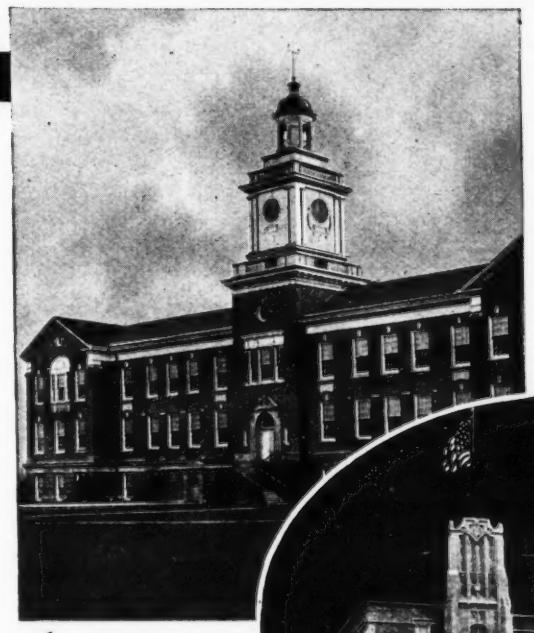
The Clark Monthly Index of School-Bond Prices will be found on Page 94.

It may be added that these letters point out a very serious indictment against present-day methods of employing school heads and teachers. It cannot be denied that boards of education are invariably made up of honest men and women whose primary interests are in the community welfare and the future possibilities of the children attending local schools. Very few boards of education are blessed, however, with many members whose understanding of educational affairs is broader than their own personal ideas conceived in bygone years when school management was considerably different from the science it is today. When candidates for the position of head of schools are being considered, such qualifications as university training, versatility to meet new situations, aggressiveness to build up and maintain schools at a high degree of efficiency, are too often made secondary to personal likes and dislikes, church membership, and the important ability to look wise and say nothing. This is especially true when an inexperienced man is trying to break into administrative work of smaller communities; it is, of course, not so true when an experienced and proved schoolman is seeking new fields to conquer.

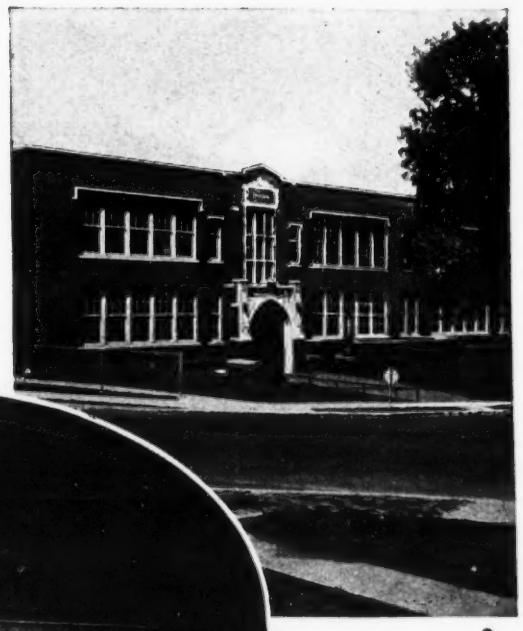
The first letter came from the president of a school board of a union high school in a town of 1,500 and represents an old and established community where the last three principals received regular invitations to leave at the end of two years. The president was requested by one of the defeated candidates to give his advice on how to meet future boards. It may be added that this particular board called in 23 applicants from all over Southern California, then

(Concluded on Page 66)

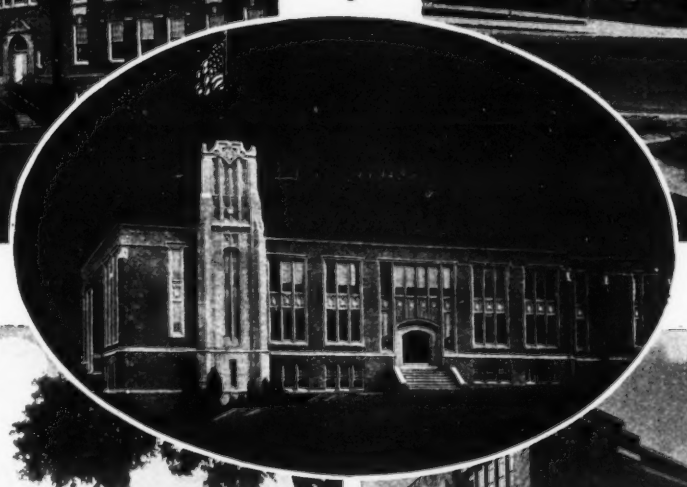
DOORS, TRIM and SMOKE SCREENS by DAHLSTROM



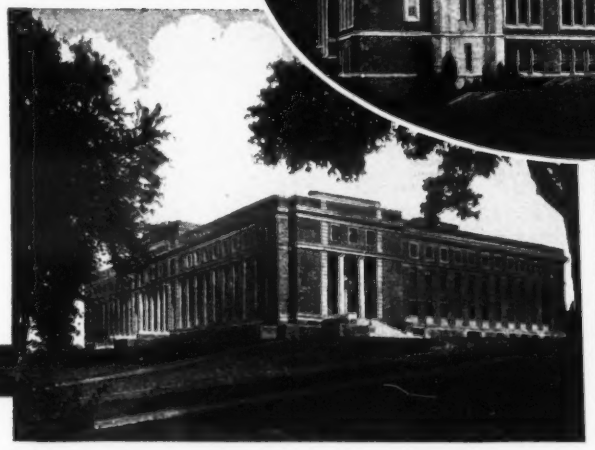
1



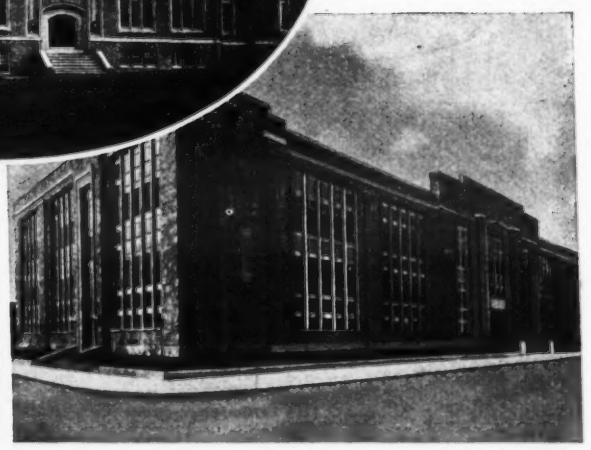
2



3



4



5

1. In the Shaker Heights School, Cleveland, Ohio, the Smoke Screens are by Dahlstrom. Architect: Franz C. Warner, Cleveland. Contractor: Robert H. Evans Co., Columbus, Ohio.

2. In the Jackson School, Omaha, Nebraska, the Smoke Screens are by Dahlstrom. Architect: F. A. Henninger, Omaha, Nebraska. Contractor: A. C. Busk Construction Co., Omaha, Nebraska.

3. In the Coventry School, Cleveland, Ohio, the Smoke Screens are by Dahlstrom. Architect: Franz C. Warner, Cleveland, Ohio. Contractor: Robert H. Evans Co., Columbus, Ohio.

4. In the Baker Chemical Laboratory, Cornell University, Ithaca, N.Y., the Entrance and Metal Swing Doors are by Dahlstrom. Architects: Bibb & Waltz, Ithaca, N.Y. Contractors: Fred Ley & Co., Inc., Springfield, Mass.

5. In the Christopher Columbus School, Binghamton, N.Y., both exterior and interior Metal Doors are by Dahlstrom. Architects: Tiffany & Kaley, Binghamton, N.Y.

In the modern School Construction, "Doors, Trim and Smoke Screens by Dahlstrom" mean added years of wear, attractiveness that is never outmoded, value . . . unequaled. Further, the famed Dahlstrom Hollow Metal Fireproof Construction . . . materially increases the safety factor. Their rugged construction . . . made possible by the best materials and finest workmanship . . . give length of life and wear resistance especially suited to the strenuous strain of school use. Details gladly forwarded upon request.

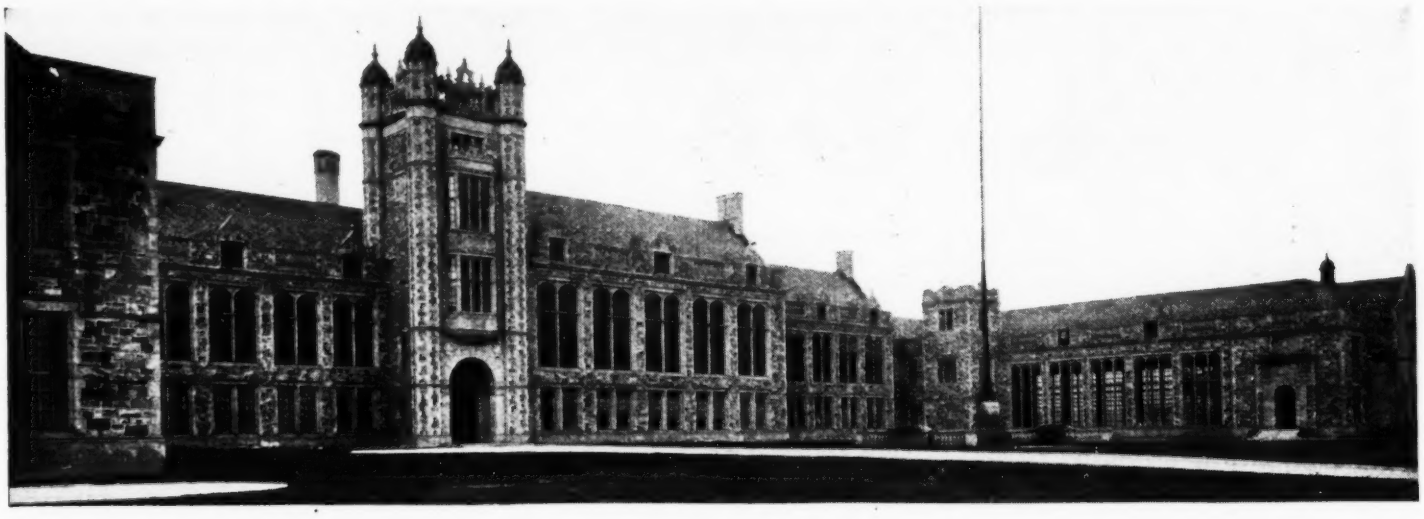
"NO BUILDING IS MORE FIREPROOF THAN ITS DOORS AND TRIM"—*DAHLSTROM*

DAHLSTROM METALLIC DOOR COMPANY

411 BUFFALO STREET ESTABLISHED 1904 JAMESTOWN, N. Y.

NEW YORK CHICAGO LOS ANGELES DETROIT DALLAS

Fordson High School, Dearborn, Michigan *Architect:* H. J. Keough *Contractors:* F. R. Patterson Construction Company



Old English . . beauty in the Modern School

In this beautiful Fordson High School, Architect Keough has created an Old World atmosphere in a thoroughly modernized building. And Fenestra School Windows have helped add both the "old" and the "new."

In towers, dormers and walls their sturdy yet slender bars and small panes harmonize with the English Collegiate design. In study halls, gymnasiums and classrooms, their large glass areas admit a flood of daylight, their accurately constructed ventilators open wide to admit fresh air; close snug-tight against the storms. And the practical advantages of these better steel windows: fire resistance, easy washing, convenient shading and economical replacement of broken panes—still further modernize the building.

Fenestra demonstrations, made without obligation for school architects, school board members and school officials, interestingly show the many advantages of Fenestra School Windows. Such a demonstration can be easily arranged. Phone the local Fenestra Office.

DETROIT STEEL PRODUCTS CO.
2282 East Grand Boulevard, Detroit, Mich.
Factories: Detroit, Michigan, and Oakland, Calif.

Fenestra
school windows

CONSOLATION LETTERS FROM SCHOOL-BOARD MEMBERS TO DEFEATED CANDIDATES

(Concluded from Page 64)

elected a teacher from a school twelve miles away.

Dear Friend—

Please don't send me any more jobs like this. Just the same I will do the best by you that I can. First, Mr. W. . . . came to our county two years ago as principal, but due to a flaw in his certificates he could not serve at O . . . ., a school about the same as ours with many of the same problems. Second, he was recommended to us by some of the best educators in the county. I think you can readily see from these two points the advantage we gave Mr. W. . . . , right or wrong.

Now personally, for you asked for it, you are a good salesman, I don't doubt that. Too often here the salesman sells the plow but cannot work it. The same I felt about you, you would make an extra-good success or failure. You woudn't drift, I am sure of that. Whether you could stand between the board and some of these "old chew-tabaccos" was a question in my mind. Your good salesmanship, good talk, good clothes, etc., would not help you I am sure. In fact that was our main objection to you, you wore too good clothes and talked too smoothly and we were afraid of those qualities. Possibly if you had worn overalls to our meeting, you would have stood a better chance of election.

You asked for this, now you have it as best I can give it. I wish you the best of success, and would like to keep in touch with you just to see what you do with your opportunities.

Sincerely,

J. B. . . . .

The following letter came from a community where school fights have been the annual custom, even outrivaling in interest each year the annual Fourth-of-July celebration, so far as the enjoyment to the community is concerned. The letter is self-explanatory.

Dear Sir:

We decided last night to promote Mr. B. . . . to the superintendency of our schools. Frankly no member of the board thinks he will be able to handle the situation, but he has been with us this past year as a teacher, has been popular in the community, and community feeling was too strong for us to bring in a new man this year. We are holding over your application until next year and hope to consider you at that time because personally you were the man we thought could best put our schools in good shape. We wanted a young man with all kinds of pep to revive our schools. You would have fitted the bill, I am sure. Here is the best of luck to you in your future efforts.

Yours truly, B. H. . . . .

Prejudices of the minority may offset the convictions of the majority where harmony is desired, as shown in the following letter:

Dear Mr. K. . . . .

Your enthusiastic nature will carry you far. This year you are not to come to D. . . . . Mr. G. . . . . was chosen. I am very sorry and I think we are the losers, although Mr. G. . . . . is a splendid man. As you may know, there were three of us very favorable to your candidacy. Mr. W. . . . . testified last night with much appreciation of your recently published articles which you sent us. Certain members of the board were afraid, however, of your youth, although that is just what we need in this valley. You have my heartfelt wishes for success and we hope eventually that you may be with us.

Very sincerely,

Mrs. G. H. H. . . . .

The final letter, brutal perhaps in its frankness, points out a distinct moral to the young schoolman who seeks to enter administrative work. "The less said, the more certain are the chances to land and hold the position." The letter follows:

Dear Mr. F. . . .

We managed to get together for a straw vote that afternoon at six o'clock and the ballot stood three for M. . . . and two for F. . . . After some discussion and especially when it was apparently settled in the minds of the three, it was made unanimous and the contract offered to Mr. M. . . .

If you will let me be as candid with you as your letter indicated, you lost the position by talking too much. Without mentioning any names, the third voter made the statement that as you would talk yourself into a job you would talk yourself out of it, to say nothing of too much talking in the meantime. Otherwise you had it won hands down.

I certainly would have been happy to have worked with you and I appreciate your interest and broadmindedness. Thank you, too, for the journals, and pray that you will accept this in the same spirit in which it is given, one of friendship and helpfulness.

Sincerely yours, T. G. L. . . .

HIGH-SCHOOL GROWTH IN NEW YORK CITY EXCEEDS EXPECTATIONS

The enormous growth of the high schools of New York City, and the promise of early elimination of part-time schedules in the face of an increase of 3,666 pupils on part time, were the outstanding features of the annual fall report of the school officials.

The report showed that there had been a registration of 169,558 pupils, or a gain of 12,317 over the enrollment of a year ago. Most of the increase in day-school registration was contributed by the high schools. The total registration in all the schools amounted to 1,060,359, which was a net increase of 15,365 pupils.

NEW features found ONLY in these Venetian Blinds

WOODSTOCK TOWER, TUDOR CITY

The 7th unit in the famous New York real estate development, Tudor City, designed, financed, constructed and managed by the Fred J. French Companies, is equipped throughout with *Columbia* Venetian Blinds. It is a fine tribute that *Columbias* are also specified for Units Nos. 9 and 10 now being completed.

1. The most radical improvement is the Spring-Gear tilt-lock. This ratchet device, because it avoids the faulty "friction principle" now in use, makes certain that the blinds will positively lock at the angle required. Yet so perfect is the mechanism, that a slight pull on the guide cord is sufficient to tilt the slats to another position.

2. The Anti-Sag center support, a *Columbia* patent, reinforces the vital top rail of the blind, and adds support— all without restricting the full angling of the blinds.

3. Such an apparently trifling convenience as making the blind easily removable has been considered, and the job made easy by means of *Columbia* Spring Installation Brackets. The entire blind is removable from these brackets by pressure of the fingers— no unscrewing necessary.

Again the pulleys on *Columbia* Venetian Blinds are equipped with double race ball-bearings running on shafts of Bessemer steel for easier, noiseless operation.

These few superior features indicated are typical of the construction throughout *Columbia* Venetian Blinds. They make clear that where good looks, mechanical perfection and long life are required, *Columbias* should be specified.

Complete specifications are available in the folder shown below. Write, or use the coupon for your copy.

The *Columbia* Mills, Inc.

225 FIFTH AVENUE, NEW YORK

Baltimore Boston Chicago Cincinnati Cleveland Dallas Denver Detroit
Fresno Kansas City Los Angeles Minneapolis New Orleans Philadelphia
Pittsburgh Portland (Ore.) Salt Lake City San Francisco St. Louis Seattle

Columbia
PERFECTED
VENETIAN BLINDS

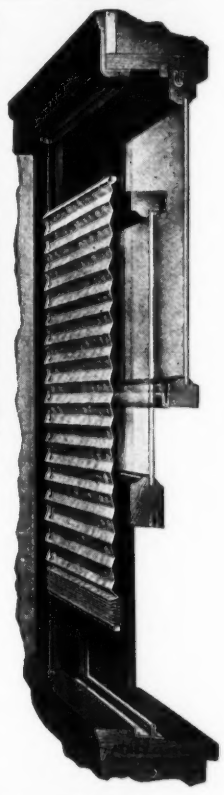
You'll want this book for your file

This folder gives complete specifications of *Columbia* Venetian Blinds, and also tells how they help to increase the daylight in the darker parts of rooms by as much as 100%. For your copy address The *Columbia* Mills, Inc., 225 Fifth Ave., New York City.

Name .....

Address .....

City ..... A. S. 10-29



COMFORT goes hand in hand with Learning

ATHEY Cloth-to-Metal Contact Weatherstrips change any wood or steel window from a rattling, loose, drafty sash to one that works smoothly and quietly and is absolutely draft-proof when closed.

ATHEY SHADES are better than ordinary SHADES and AWNINGS combined. They do not cut off the top light as awnings do, and allow a great deal more shaded light to enter than ordinary shades.

Besides being the handsomest shade for any School, Office, Hotel, Hospital or Public Building, ATHEY Shades are practical, as they are instantly adjustable to shade any part of the window.

Athey

Cloth Lined Weatherstrips and Perennial Window Shades

This is the beginning of winter. Are your pupils conscious of physical discomfort? If they are they are not learning as they should. Few principals realize what a handicap a cold classroom places upon school averages. Few School Boards know how easily and inexpensively a cold, drafty room may be changed to a comfortable one. Schools short on radiation find that ATHEY cloth-lined weatherstrips eliminate the necessity of an enlarged plant and save the weatherstripping cost in less than three years. A large St. Louis installation eliminated the necessity of a 350 H. P. Boiler, and almost saved the cost of the Athey Weatherstrips with the saving in fuel and ash and fuel handling.

DO IT NOW. The winter has only begun. Write for prices, giving size and number of windows.

ATHEY COMPANY, 6043 West 65th Street CHICAGO

Representatives in all Principal Cities and in Canada.

Washington Correspondence

A. C. Monahan, Formerly U. S. Bureau of Education

Now Office of Education Instead of Bureau of Education

The name "Office of Education" is now the official title of what has been known for many years as the "U. S. Bureau of Education." The change which was ordered by the Secretary of the Interior, Dr. Ray Lyman Wilbur, became effective during October. Since July 1, 1869, it has been called a "Bureau." For two years prior to that time, from the date of its first establishment, it was called a "Department." An Act of Congress approved July 20, 1868, changed it to a subdivision of the Department of the Interior. This act refers to it both as a "bureau" and an "office."

The compiled statutes of the United States has five paragraphs relating to the establishment of the bureau. The first says, "There shall be established in the Department of the Interior a bureau called the Office of Education, the purpose of which. . . ." The second paragraph says "The management of the Office of Education shall be intrusted to a Commissioner of Education. . . ." These two paragraphs would indicate that it was the original intention that it should be called "Office of Education." The third paragraph, however, uses the term bureau; "The Commissioner of Education is authorized to prepare and publish a bulletin of the Bureau of Education." Again the fifth pararaph entitled "Offices for use of the bureau" says ". . . shall furnish proper offices for the use of the Office of Education." In all the above quotations the words are capitalized as in the Statutes.

It would seem from these quotations that either name might be used, and that the Secretary is acting within his powers in changing the name. Some question may arise over appropriations, as in appropriation measures passed by Congress the office has been referred to as the Bureau of Education and appropriations have been made for its work under that name.

Another interesting change accompanying this change of name will be noted on the Bulletins to appear from the office in the future. They will be designated "Department of the Interior Education Bulletin, 1929, No. X." In the past they have been called "Department of the Interior, Bureau of Education, Bulletin, 1929, No. X." In the latter part of Dr. E. E. Brown's commissionership and the early part of Dr. P. P. Claxton's term of office, the name of the Department of the Interior did not appear on the bulletins at all. They were designated "United States Bureau of Education, Bulletin 1911, No. X."

Reorganization of the U. S. Office of Education

With the change in the name of the educational office of the Government from bureau to office, comes several interior changes in organization intended to systemize and improve the work. Six major divisions have been created:

A. Administrative, under the direction of the chief clerk. This will include housing and routine, and the administration of the Alaska schools for natives.
B. Educational research and investigations, under the newly created office of assistant commissioner of education.
C. Publication, under the editor-in-chief.
D. Library service, under the chief librarian.
E. Educational service, under a chief of educational service.
F. Major educational surveys, under the commissioner of education.

Under the Division B there will be five subdivisions:

1. Collegiate and professional schools.
2. American school systems.
3. Special schools and educational activities.
4. Foreign school systems.
5. Statistical service.

The work of the Alaska section of the Office of Education has been decreased considerably by the transfer of the care of the reindeer herds from it to the immediate charge of the ex officio commissioner for Alaska. He is responsible to the Secretary of the Interior, so that the control of this phase of work remains in the department. The superintendent of reindeer and his two assistants are transferred to the ex officio commissioner at the same time.

Capper-Robison Department of Public Education Bill

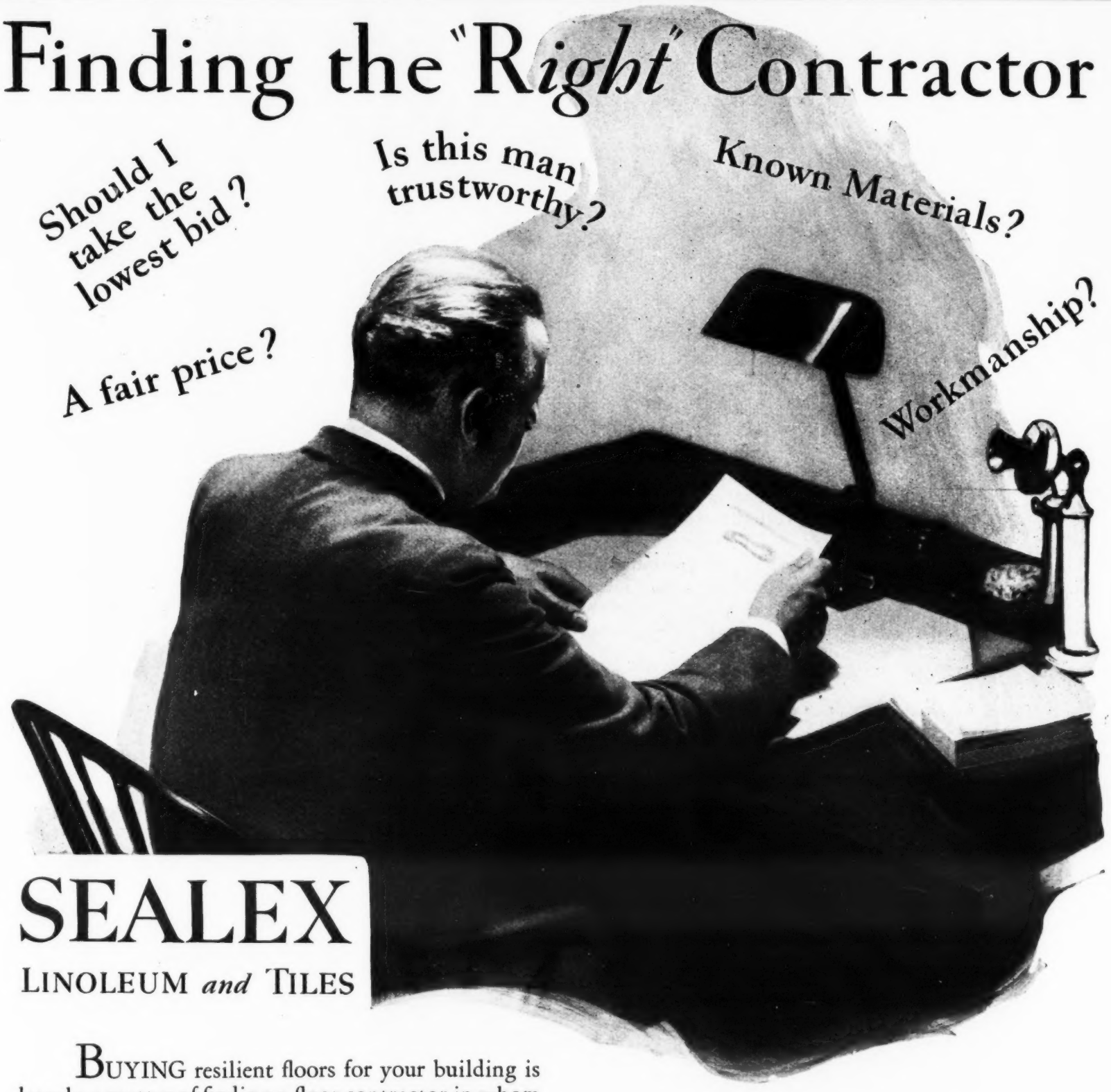
A bill to create a Department of Public Education, introduced in the Senate by Mr. Arthur Capper, of Kansas, and in the House by Mr. Robison, of Kentucky, would provide a Secretary of Education in the President's Cabinet, as proposed in the previous bills known as the Curtis-Reed Bill, and earlier as the Smith-Towner Bill. In other respects it differs considerably from its immediate predecessor. The first difference is in its name. The word "Public" has been inserted to make it clear that the purpose of the department proposed is to improve public schools and that it is not to have any particular relations with private schools of any sort. "To aid and encourage the public schools and to promote public educational facilities of the Nation" are the words of the bill.

It differs also from its predecessor in that it does not include in the proposed department any of the present government educational offices, except the bureau of education. The Federal Board for Vocational Education would remain an independent office as far as this measure is concerned, as would many other offices whose work is largely educational. An appropriation of $1,500,000 is proposed for the department. This is for its own work in studying education and carrying out the program of the present bureau, except on a larger scale. No appropriation is carried to assist the states in their educational work as was provided in the original Smith-Towner Bill.

The new bill provides for a National Council on Education, as provided in the Curtis-Reed Bill. This council would be composed of the chief state school officers by whatever name known, and representatives of the United States possessions, Alaska, Porto Rico, etc. It would meet once a year to advise with the proposed

(Concluded on Page 70)

Finding the "*Right*" Contractor



SEALEX
LINOLEUM *and* TILES

BUYING resilient floors for your building is largely a matter of finding a floor contractor in whom you can have confidence. Contractor A's bid is low—low enough to give grounds for question. Contractor B is highly recommended—and sky-high in price. Shopping around seems to get you nowhere.

One resilient flooring contractor in your vicinity, however, is not to be classed with others. He has been selected because of his long experience as well as his high standing in the community. He maintains a staff of skilled workmen—employs the most modern methods. He is the authorized contractor for Bonded Floors of *Sealex* Linoleum and *Sealex* Treadlite Tile.

His prices? Well, Bonded Floors contractors are constantly landing important jobs in the face of the most strenuous competition.

His advice? Impartial, because he installs not one but several types of resilient floors *Sealex* Battleship Linoleum, *Sealex* Treadlite Tile, *Sealex* Jaspé Linoleum, *Sealex* Inlaid Linoleum and *Gold Seal* Cork Carpet. For this reason, he is able to give you the exact type of resilient floors that your needs demand.

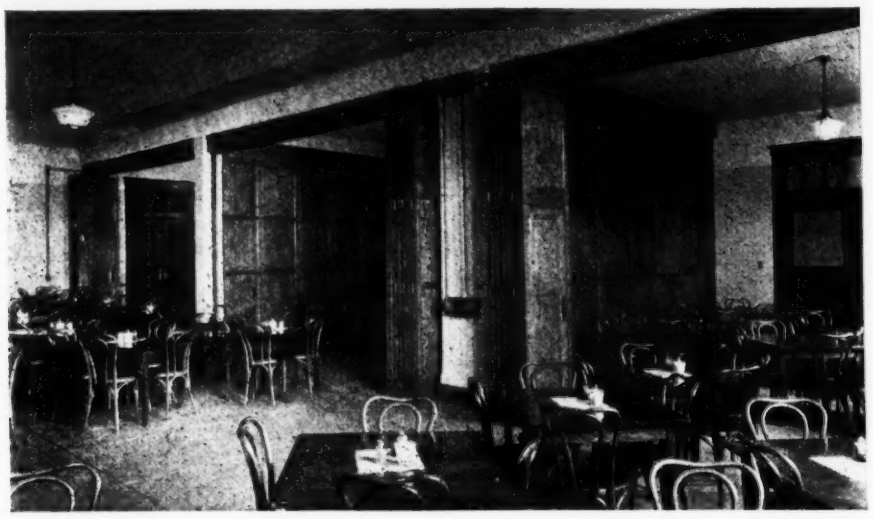
CONGOLEUM-NAIRN INC.
General Office: Kearny, N J.
Authorized contractors for Bonded Floors are located in principal cities

BONDED FLOORS

ISSUED BY U.S. FIDELITY AND GUARANTY CO.

Resilient Floors Backed by a Guaranty Bond

CIRCLE A FOLDING PARTITIONS
(Sound Insulated)
have a positive Roller Chain Drive



CIRCLE A Folding Partitions are a complete improvement over any folding partitions on the market. Mechanically operated by roller chains—not ropes or cable—hence the drive is positive.
Patented hanging method insures easy operation. A special sealing system at floor, walls and ceiling effectively stops noise, odors and light. Doors are thoroughly insulated against sound.
There are no dirt-harboring tracks with Circle A Folding Partitions. All workmanship and materials are in keeping with highest type of cabinet work. Furnished in type of construction suitable for any school, hall or other requirement. Send for details.
Ask also for information on Circle A Rolling Partitions.

CIRCLE A PRODUCTS CORPORATION
625 South 25th Street, Newcastle, Ind.

CIRCLE A FOLDING PARTITIONS
··Sound Insulated··

(Concluded from Page 68)

secretary of education and would be paid expenses for attending this meeting but no other financial renumeration.

Souvenirs of Lumber From the White House

Five thousand blocks of wood cut from trusses removed from the roof of the White House two years ago, when the Executive Mansion was remodeled, will be distributed as souvenirs among schools throughout the country by the National Lumber Manufacturers' Association. These trusses held the roof of the White House for more than 112 years, and while it was occupied by at least 26 Presidents of the United States.

The blocks which will be sent to school principals upon request only, and should serve as valuable patriotic inspirational material, particularly for small children far removed from the White House.

Washington's Five-Year School-Building Program

Senator Arthur Capper, of Kansas, chairman of the Senate District of Columbia committee, has started an inquiry into the District's five-year school-building program passed by Congress in 1925, and never fully carried into effect. The inquiry is to determine if possible, the reasons for the delay, in building the required buildings. There appears to be a question in the minds of some people whether Congress is to blame for not making necessary appropriations, or whether the district commissioners are to blame for not using the early appropriations as rapidly as they were available.

The Senator says, "I believe it would be useful to those interested in this program to have an authoritative statement, showing the exact status with respect to each of the items in the five-year-building program. Furthermore, we should have a statement of the reasons for delays in carrying out the intent of Congress. If sufficient appropriations have not been made, if there has been administrative delay in using funds appropriated because of lack of personnel, proper organization, or other reasons; if the growth of school population has exceeded estimates, etc., we should have the facts for consideration and early action."

The Senator adds, "It seems to me that an effort should be made to determine why Washington's school facilities are not up to the standards prescribed by the act, so that action may be taken by Congress to remedy any deficiencies or defects, and that the school children may be furnished with adequate and proper school facilities."

Motion Pictures in Education

The U. S. Department of Commerce has in preparation a report on the use of motion pictures in education. Information for it was obtained from a questionnaire sent to the superintendents of schools in every city and town in the United States. The questionnaire, which was prepared with the cooperation of the Bureau of Education and specifically indorsed by the commissioner of education was divided into two main sections, one to be answered by the superintendent of the schools himself, and the other by the teacher in actual charge of classes using motion pictures in schoolwork.

The questionnaire to the superintendent of schools sought information as to the extent, and type of use, of motion pictures in schools both in curricular and extracurricular activities, the organization of the visual instruction unit in the school itself, from what sources and the manner in which films are secured, the number of projection machines in use, and other questions designed to indicate the distribution potentialities of the education field.

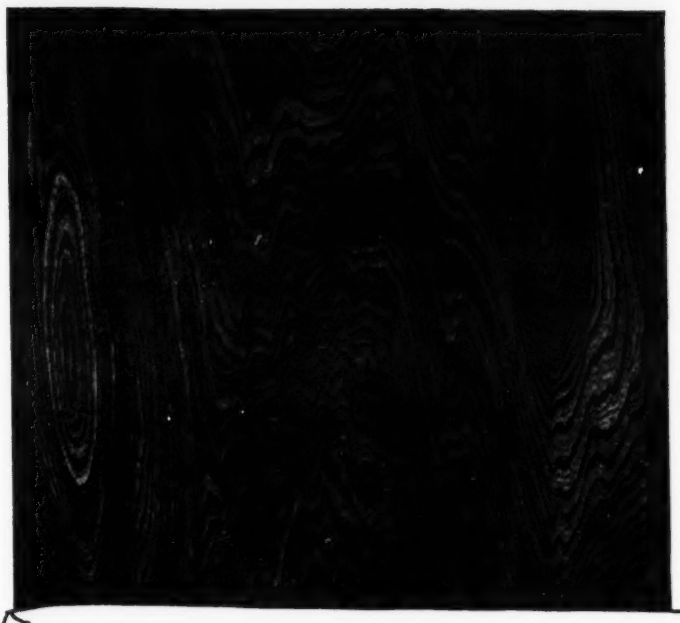
The questionnaire directed to the teacher seeks especially to find out the advantages on the one hand, which the use of motion pictures contributes to classroom work, and on the other hand, the difficulties which must be overcome to make these of maximum utility. Other questions along this line will, it is hoped, lead to a knowledge of the type of material to be put into educational pictures to make them adaptable for school use.

A report will be published giving a condensed survey of the views of many educators who are interested in the field of visual instruction. A pamphlet of this kind should be of value not only to producers and distributors of educational pictures, by assisting them to make subjects which accurately fit into the school curriculum, but will show the results being accomplished by the use of this medium.

—The Department of Secondary-School Principals of the National Education Association has approved a plan of group health and accident insurance for its members. The plan which has been worked out with one of the strongest insurance companies in the country, offers special inducements of low rates and favorable premiums. The undertaking is one which certainly deserves the cooperation of all school executives. It is evidence that the Department has the professional, as well as the personal, welfare of its members at heart, and that it is not willing to draw upon public funds for every welfare movement that can be proposed for teachers and school executives. More of this attitude of self-help would do much to establish the essentially professional character of teaching, and would raise the popular respect for teachers and school executives. Special privileges and concessions which teachers have sought and received at the hands of lawmaking bodies, private corporations, and individuals have frequently harmed the profession more than they have benefited individuals.

—In commenting on the subject of school consolidation in the rural districts the Iron Mountain, Michigan, news says:

"The consolidation of schools is another offshoot of the gasoline and motor age. As it involves the transportation of large numbers of children over considerable distances, and their expeditious assembling from and return to scattered homes, it had to wait for the development of the rapid and cheap transportation that has been so profoundly changing nearly every aspect of modern American life."



UNIVERSITY OF NEW HAMPSHIRE
EDWARD M. LEWIS, PRESIDENT
DURHAM, N. H.

COLLEGE OF TECHNOLOGY
DEPARTMENT OF ARCHITECTURE

OFFICE OF SUPERVISING ARCHITECT
FOR THE UNIVERSITY
E. T. HUDDLESTON, ARCHITECT

April 12, 1929.

Roddis Lumber & Veneer Co.,
Marshfield, Wisconsin

Attention J. U. Smith.

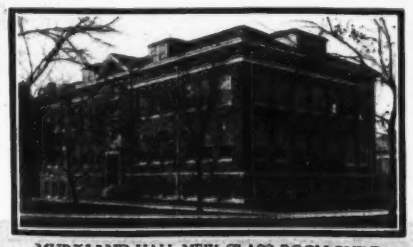
Dear Sir:-

In answer to your inquiry addressed to our Superintendent of Property relative to our opinion of Roddis Flush Doors which we have used in one of our latest dormitories and are now having installed in our new Chemistry Building, we selected the flush type of door for the dormitory for the very reason quoted from the letter of Mr. Tenney, namely to prevent the breakage that comes from students losing keys and smashing panels in the doors in order to get in.

In general, we like the appearance of the flush panel for our class room building. I feel personally such a door will give us longer wear and a more lasting and satisfactory finished door than a panel door.

We are well satisfied with the Roddis Flush Door as evidenced by my specifying it outright for the Chemistry Building.

Very truly yours,
E. T. Huddleston
Architect.



MURKLAND HALL, NEW CLASS ROOM BUILDING, UNIVERSITY OF NEW HAMPSHIRE.
E. T. HUDDLESTON . . . . . ARCHITECT

HETZEL HALL, NEWEST DORMITORY FOR MEN, UNIVERSITY OF NEW HAMPSHIRE
E. T. HUDDLESTON . . . . . ARCHITECT

Why Roddis Flush Doors Are Specified

Mr. Huddleston's letter conveys the high regard universally held for Roddis Flush Doors.

Your school buildings, too, will benefit by the completely solid, 5-ply construction of Roddis Flush Doors and their permanently enduring workmanship and finish. It is highly recommended that you equip your school buildings with Roddis Flush Doors. More details and new catalog sent on request.

RODDIS LUMBER & VENEER COMPANY
125 FOURTH STREET, MARSHFIELD, WISCONSIN
Manufacturers of Flush, Panel and Custom Built Doors
Established 1890
Distributors In All Principal Cities

RODDIS RED-WHITE-BLUE DOWEL TRADE MARK

ON THE EDGE OF THE RODDIS FLUSH DOOR

A $1,500,000 Investment Protected Against Depreciation by Copper and Brass

$1,500,000 High School at Great Neck, Long Island. Guilbert & Betelle, Newark, N. J., Architects

THIS magnificent new high school in Great Neck, Long Island, incorporates the most modern practices in school construction. Among other interesting innovations, it has a motion picture machine, and radio outlets in all rooms.

To protect the huge investment it represents from depreciation and to minimize maintenance costs, the building is equipped in vital spots with rust-proof Copper and Brass. Brass pipe assures satisfactory water service with freedom from expensive plumbing repairs and replacements. Copper flashings and gutters give permanent protection from rain and snow.

In all structures designed to give long service, Copper, Brass and Bronze are the logical metals to use. Building authorities and architects are agreed that these metals are always most economical for public buildings.

Brass pipe, or Copper tubing, Copper flashings, gutters and downspouts and solid Brass or Bronze hardware and lighting fixtures *cannot* rust. They give life-long service.

The slightly higher initial cost of Copper, Brass and Bronze is far overbalanced by their exceptional life. In the long run they are invariably an economy.

Our Building Service Department will be glad to advise you about the uses and proper application of these metals.

COPPER & BRASS
RESEARCH ASSOCIATION
25 Broadway, New York

Midwestern Office:	*Canadian Office:*	*Pacific Coast Office:*
Landreth Building St. Louis. Mo.	67 Yonge Street Toronto, Ont.	Architects Building Los Angeles, Calif.

AMERICA'S LEADING ARCHITECTS RECOMMEND COPPER, BRASS AND BRONZE

California Students

High School, Lodi, California — *The Swimming Pool at This High School Is Sterilized by a W & T Chlorinator*

Swim in Drinking Water

In California — where practically all of the modern high schools are equipped with swimming pools — *chlorination* has the highest endorsement by school boards and health officials. In school pools subject to heavy bathing loads it is imperative that the sterilizing agent have positive continuous disinfecting action *in the pool water itself.*

Chlorination has an active residual sterilizing effect in the pool water, the intensity of which can be readily adjusted by using W & T chlorinating equipment to meet any bathing load.

WALLACE & TIERNAN CO., Inc.

Manufacturers of Chlorine Control Apparatus

NEWARK NEW JERSEY

NEW YORK · LOS ANGELES · JACKSONVILLE · DALLAS · OGDEN · CHICAGO · SEATTLE · CHATTANOOGA · DETROIT · PHILADELPHIA · KNOXVILLE · ST. LOUIS · CHARLOTTE · KANSAS CITY · SAN FRANCISCO · BUFFALO · OKLAHOMA CITY · BOSTON · MINNEAPOLIS · PITTSBURGH · INDIANAPOLIS · SPOKANE

WALLACE & TIERNAN, LTD., TORONTO, CANADA

WALLACE & TIERNAN, LTD., LONDON, ENGLAND

SP-7a

School-Law Notes

School Lands and Funds

The court will not interfere with the school trustees' exercise of discretion in matters confided by law to their discretion, absent abuse thereof.—McLeod v. State, 122 Southern reporter 737, Miss.

The reasonableness of rules made by school trustees is a question of law to be passed upon by the courts (Heminway's code of 1927, §8767).—McLeod v. State, 122 Southern reporter 737, Miss.

Schools and School Districts

School districts are agencies of the state existing for the sole purpose of performing their duties in maintaining an efficient system of free schools.—Renton v. Kaneville Community High-School Dist. No. 147, 250 Illinois Appellate 6, Ill. App.

A petition for an election to establish a school district reciting, that it contained signatures of 25 per cent of the legal voters, was sufficient to give the court jurisdiction (Ky. statutes, §4464).—Elkhorn Coal Co. v. Wright, 18 Southwestern reporter (2nd), 862, Ky.

A petition for an election to establish a school district, signed by the chairman of a county board of education, was sufficient approval by the county board.—Elkhorn Coal Co. v. Wright, 18 Southwestern reporter (2nd), 862, Ky.

Only a majority of the voters actually voting and residing within the school district and entitled to vote is necessary to impose a school tax.—Elkhorn Coal Co. v. Wright, 18 Southwestern reporter (2nd), 862, Ky.

The contention that an election certificate for establishing a school district did not show that a majority of the legal voters voted in favor of a proposition is held without merit.—Elkhorn Coal Co. v. Wright, 18 Southwestern reporter (2nd), 862, Ky.

A slight irregularity between a certificate of election showing an election for establishing a school district one day and an order for an election on another, did not void an election.—Elkhorn Coal Co. v. Wright, 18 Southwestern reporter (2nd), 862, Ky.

A public policy does not favor declaring an original organization of common-school districts fatally defective after the lapse of a long period of time.—Elkhorn Coal Co. v. Wright, 18 Southwestern reporter (2nd), 862, Ky.

The board of education of a city of the first class in Pennsylvania, had authority to add territory to its school district taken from the school district of a city of second class (Kans. laws of 1925, c. 222, §1; c. 228, §1).—State v. Board of Education of City of Pittsburgh 278, Pacific reporter, 741, Kans.

The discretion of a county superintendent in the matter of transferring property from one school district to another will not be interfered with in the absence of abuse (Remington complete statutes of Washington, §4727).—In re Chelan Electric Co., 278, Pacific reporter 171, Wash.

The only objection to transferring property between school districts being that taxes on property transferred will be increased, the discretion of the superintendent was not disturbed (Remington complete statutes of Washington, §4727).—In re Chelan Electric Co., 278, Pacific reporter 171, Wash.

School-District Government

Three directors constitute a statutory quorum of a fourth-class school district, irrespective of vacancies in office, or the absence of members from the meeting.—(Pa. statutes of 1920, §4717).—In re Wells Township School District's Directors, 146 Atlantic reporter 601, Pa.

A formal order of the board of education can be revoked only by a vote of the majority at a board meeting.—Wallis v. Magnet Cove Rural Special School Dist., 17 Southwestern reporter (2nd) 895, Ark.

A school clerk assumes the liability for school funds, where he deposits funds in a bank other than that designated by the school board (Oreg. laws of 1925, p. 228, amending the Oregon law §5142).—New Amsterdam Casualty Co. v. Robertson 278, Pacific reporter 963, Oreg.

A county board of education is without authority to appoint a secretary and office clerk in the office of the county school superintendent.—State v. Board of Public Instruction for Duval county, 123 Southern reporter 545, Fla.

An unmarried woman, without children or property, was not entitled to vote at the annual meeting of a rural school district (Nebr. complete statutes of 1922, §§6271, 6272).—Cunningham v. Ilg, 226 Northwestern reporter 333, Nebr.

School-District Property

Parents whose children have been transferred as pupils to an adjoining school district cannot vote on a change of the schoolhouse site in the home district (Nebr. complete statutes of 1922, §6524, as amended by the Nebr. laws of 1925, c. 176, and the laws of 1927, c. 81).—Cunningham v. Ilg, 226 Northwestern reporter 333, Nebr.

One "present" but not voting at an annual meeting of the rural-school district must be considered in determining a requisite majority for a change of the schoolhouse site (Nebr. complete statutes of 1922, §6275).—Cunningham v. Ilg, 226 Northwestern reporter 333, Nebr.

A bond referring specically to a contract requiring a contractor to execute a bond to satisfy the claims of mechanics and materialmen will be termed a statutory bond (W. Va. code, c. 75, §12).—Tug River Lumber Co. v. Smithey, 148 Southeastern reporter 850, W. Va.

A provision in the school contractor's bond that no right of action should accrue to any other than the obligee was void (W. Va. code, c. 75, §12).—Tug River Lumber Co. v. Smithey, 148 Southeastern reporter 850, W. Va.

School-District Property

Where a board of school trustees sold school property without fraud, the trustees subsequently elected could not, five years after sale, rescind it (Ky. statutes, §4471al).—Trustees of the Congregational Church of Evarts v. Board of Trustees of Evarts Graded Common School Dist., 18 Southwestern reporter (2nd) 881, Ky.

A school board cannot validate an illegal election to locate a schoolhouse site by subsequent recogni-

HARTSHORN JOANNA CLOTH WINDOW SHADES INSTALLED IN BEAUTIFUL MANOR APARTMENT

Hartshorn Est. 1860

SHADE ROLLERS *and* WINDOW SHADE CLOTH

REMINISCENT of the Elizabethan era, the spacious new Manor Apartment in Teaneck, N. J. establishes a new ideal of gracious living.

The architect, P. J. Jossier, selected Hartshorn Joanna Cloth, mounted on Hartshorn Rollers, for its soft, satin finish and resistance to sun, dust, rain and wear. It is supremely suitable for this fine apartment estate—and for other fine buildings, everywhere.

STEWART HARTSHORN COMPANY
250 Fifth Avenue, New York City

tion.—Benton v. Kaneville Community High-School Dist. No. 147, 250, Illinois Appellate 6, Ill.

The construction by a school superintendent of a contract for fire-prevention work is held binding on a contractor, in the absence of fraud, bad faith, or mistake of law.—Barash v. Board of Education of School Dist. of City of New York, 235 N. Y. S. 30, 226 Appellate Division, 249, N. Y. App. Div.

School-District Taxation

The court, in determining whether two thirds of the qualified voters constituted a majority of the registered voters, cannot deduct the disqualified voters from the registered voters.—Buchanan v. Woodland Consol. School Dist., 148 Southeastern reporter 663, conforming to answer to certified question (Sup.) 148 Southeastern reporter 663, Ga. Appellate Court.

A statutory requirement that the maturities on tax school-district bonds shall be submitted to the freeholders may be modified by statute (Fla. complete general laws of 1927, §721 et seq.; Fla. constitution, art. 12, §17, as amended in 1924).—Davis vs. Dixon, 123 Southern reporter 536, Fla.

A constitutional requirement for paying school-district bonds in annual installments within thirty years provides a mandatory and exclusive plan of maturity (Fla. constitution, art. 12, §17, as amended in 1924).—Davis v. Dixon, 123 Southern reporter 536, Fla.

Refunding bonds intended to defer the payment of interest on school-district bonds over three years after the issuance of the original bonds is held invalid (Fla. constitution, art. 12, §17, as amended in 1924; Fla. general laws of 1927, §720 et seq.; general revised statutes of 1920, §579, et seq.; as amended; Fla. acts of 1927, c. 11855).—Davis v. Dixon, 123 Southern reporter 536, Fla.

The apportionment of the proceeds of a bond issue covering the indebtedness of school districts of Oconee county, is held not arbitrary and in conflict with the general intent of the South Caroline state constitution (S. C. act of March 15, 1929).—Shelor v. Pace, 148 Southeastern reporter 726, S. C.

The bond issue of School Dist. No. 10, of Cherokee county, South Carolina, bringing the bonded indebtedness of the district to an amount exceeding $300,000, is held invalid, notwithstanding a statute authorizing the district to borrow money (S. C. constitution, art. 10. §5, as amended, statute at large, p. 4; S. C. act of March 16, 1929, statute at large, p. 772).—Smith v. Littlejohn, 148 Southeastern reporter, 719, S. C.

Taxation to pay a bond issue covering the indebtedness of school districts of Oconee county, South Carolina, is held not beyond the constitutional limitations (S. C. act of March 15, 1929; S. C. constitution, art. 11, §6; art. 10, §§5, 6).—Shelor v. Pace, 148 Southeastern reporter 726, S. C.

An election for a school-bond issue is held not invalid because also authorizing an expenditure for maintenance (Ky. state suppl. of 1928, §§4426—2, 4426—3).—Hoagland v. Henry County Board of Education, 18 Southwestern reporter (2nd), 875, Ky.

Teachers

The mere possession of a degree is held not to entitle a junior-high-school teacher to placement as possessing eligibility requirements of a senior-high-school teacher (Act of June 20, 1906, §6, 34 Stat. 319; Act of June 4, 1924, §§1, 2, 3, 6, (*d*), (*e*), 19, 43 Stat. 367; Act Feb. 28, 1929).—United States ex rel. Gillem v. Carusi, 32 F. (2nd), 942, App. D. C.

A constitutional provision relating to the establishment of schools does not deprive the legislature of the power to pass laws authorizing the trustees to make rules and regulations (Miss. Constitution of 1890, §201).—McLeod v. State, 122 Southern reporter 737, Miss.

A school board's failure to furnish a building in which to continue a school on the destruction of the original building, is held a breach of contract to employ a teacher.—Abrams v. Jackson County Board of Education, 18 Southwestern reporter (2d) 1000, 230 Ky. 151.

The school directors could lawfully retire a school teacher holding a life certificate, where her services were no longer needed (Oreg. tenure of office act, as amended by the laws of 1917, p. 196, and again by the laws of 1921, p. 470).—Funston v. Dist. No. 1 in Multnomah county, 278 Pacific reporter 1075, Oreg.

The directors of a school district had no authority to provide other work for a teacher holding a life certificate to teach millinery, where her services for that subject were no longer needed (Oreg. laws, §§4960, 5042, 5054).—Funston v. Dist. No. 1 in Multnomah county, 278 Pacific reporter 1075, Oreg.

Pupils

The appointment of attendance officers by the county school board under an invalid law does not give appointees status, making them removable as subordinate officers (Fla. complete general laws of 1927, §688 et. seq.; Fla. constitution of 1885, art. 12, §3).—State v. Board of Public Instruction of Duval county, 123 Southern reporter 540, Fla.

A child of school age should not be excluded from school, unless his conduct, or moral character, clearly warrants his exclusion in the public interest.—Nutt v. Board of Education of City of Goodland, Sherman county, 278 Pacific reporter 1065, Kans.

THE LENGTH OF THE SCHOOL YEAR IN THE UNITED STATES

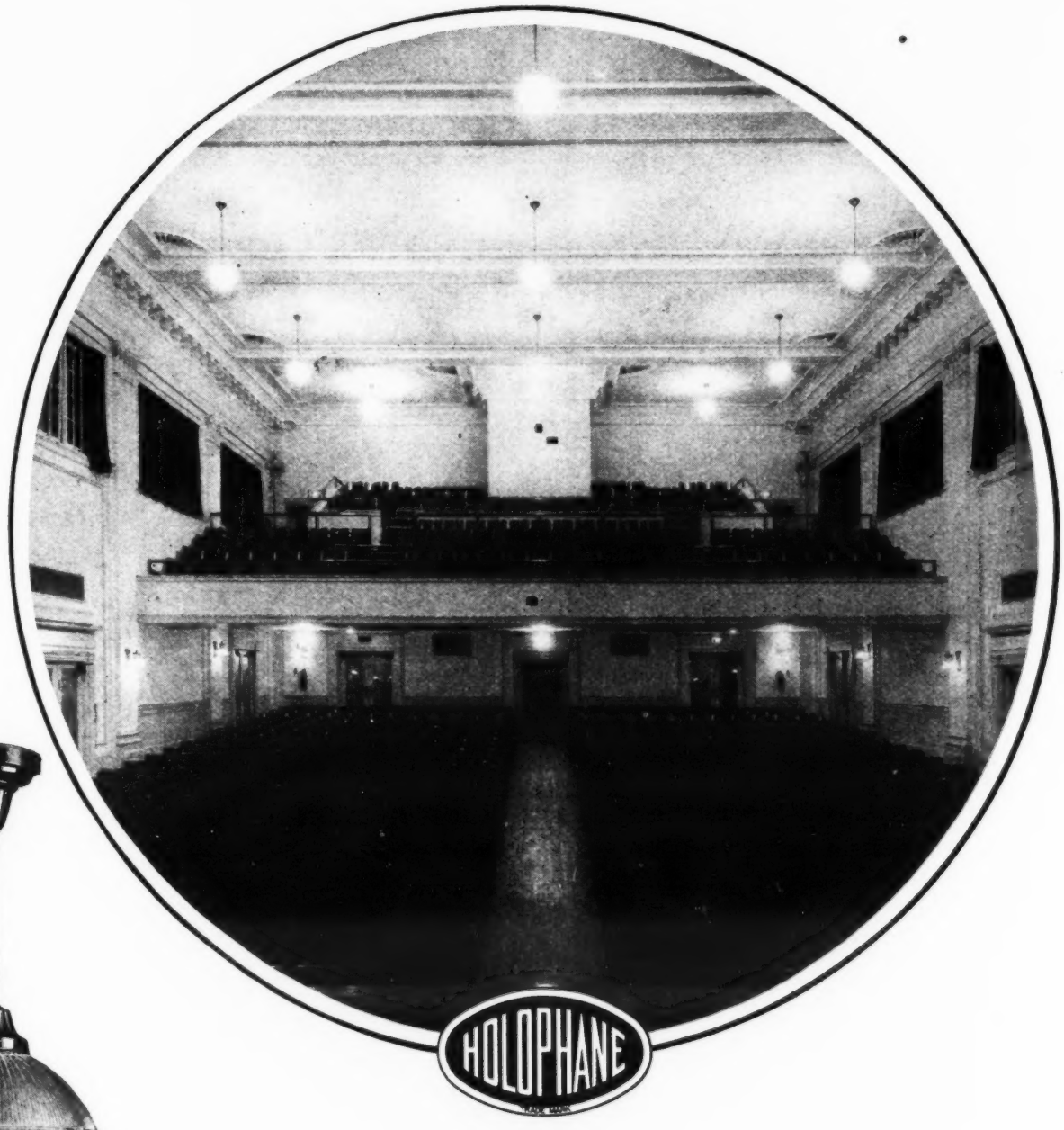
The Bureau of Education has issued a special circular on "The Length of the School Year," in which it is shown that fifty of 800 cities have added from 5 to 20 days to the school term. The state of New York has increased the term to 190 days. In cities having a school term of ten months, there are often so many holidays that the schools are in actual session only 185 or 190 days, and in many cities having a nine months' term, the actual number of days taught is much less than 180.

According to the report, the average length of the school term in the cities of the country as a whole would be greatly increased, if the school month were made to consist of twenty days of actual teaching. In Pennsylvania, in cities having a nine months' school term, the schools are in actual session 180 days, and in those cities having a ten months' term, schools are in actual session 200 days.

While the all-year school is found in only a few cities, many have organized summer schools, which are in session six weeks, beginning with July 1. These schools are, however, only for pupils who have failed in a subject or two, and for those who are thought capable of advancing a grade.

—Supt. R. G. Jones, of Cleveland, Ohio, in a study of pupils in the schools, finds that 70 per cent are average, or better than average, learners. He places 1 to 2 per cent of the pupils in the genius class; 18 per cent as rapid learners; 48 per cent as average; 24 per cent as slow; 3½ per cent as border-line, and the rest defective or feeble-minded.

Superintendent Jones pointed out that considerable progress has been made in the classification of pupils, and intimated that a trade school for girls would be established in the near future on the west side of the city.



THE UNIT

PHOTOGRAPH SHOWS
THE LIGHTING RESULT

PLANNED LIGHTING

WITH HOLOPHANE SPECIFICS

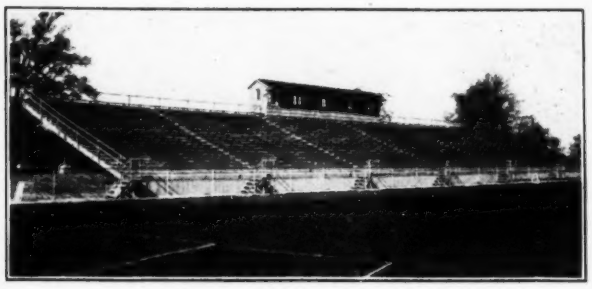
FOR AUDITORIUMS

WRITE FOR BOOKLET NO. 344A

HOLOPHANE CO., INC.

342 MADISON AVE., NEW YORK CITY

SAN FRANCISCO CHICAGO MILWAUKEE TORONTO
PHILADELPHIA BALTIMORE ST. LOUIS SYRACUSE
HARTFORD BIRMINGHAM LOS ANGELES BOSTON
CLEVELAND CINCINNATI



A Pittsburgh-Des Moines All Steel Grandstand Located at Oxford, Ohio.

— PROVIDING —

A MAXIMUM SEATING CAPACITY

for any available area

AT A MINIMUM COST

THE ONE SAFE, ECONOMICAL ALL-STEEL GRANDSTAND

It is not practical or good business to have school athletics with just teams. The patrons of your athletic events are the important members in building up your school reputation, and in financing your physical education program.

Do you provide comfortable, safe and up-to-date seating facilities for your friends? Then you surely cannot afford to pass up this opportunity.

The Pittsburgh-Des Moines all-steel grandstand is the one safe, economical, all-steel stand. There's a high investment value—the value is always there.

And as for cost—our deferred payment plan saves you that worry and makes it possible for the stand to earn its own cost.

Write for further information—there are no obligations.

Pittsburgh - Des Moines Steel Company

89 Neville Island, Pittsburgh, Pa. | 991 Tuttle St. Des Moines, Ia. | 693 Hudson Term'l Bldg. New York City

School Hygiene and Sanitation

THE THYROID GLAND AND COMMUNICABLE DISEASES AMONG SCHOOL CHILDREN

Dr. Robert Olesen, surgeon of the U. S. Public Health Service, in a recent report on "The Thyroid Gland and Communicable Diseases Among School Children," presents in the U. S. Public Health Report, the results of a careful study of the immediate and remote effects of communicable diseases upon the thyroid glands of elementary-school children in Cincinnati.

Dr. Olesen, in his report, points out that goiter is due either to an absolute or relative deficiency of iodine. Interference with the intake and utilization of iodine available in ample quantity, such as occurs in infections and intoxications, or when partaking of abnormal food combinations, may also be the contributing causes of simple goiter.

In a study of the relation of foci of infection to goiter incidence, Dr. Olesen makes clear that various studies have failed to disclose a definite relationship between endemic goiter and the potential foci of infection. The studies of Olesen and Taylor among school children in Cincinnati and in the state of Connecticut, failed to reveal a relationship between diseased tonsils and decayed teeth and simple goiter. Similarly, studies by Hertzler and Bram have failed to establish a connection.

In order to throw some light upon this question, a study lasting three years was made, involving a large number of elementary-school children in Cincinnati. The study was directed along two general and complementary lines. First, the thyroid condition was noted before and after certain communicable diseases. The second phase of the study dealt with the relationship between thyroids and past communicable diseases.

The results of the thyroid examinations before and after the illness of 589 boys and 636 girls showed that in 51.7 per cent of the boys, and 45.6 per cent of the girls, no change in the size of the thyroid could be detected. A reduction in thyroid size had occurred among 13.8 per cent of the boys and 11 per cent of the girls. The thyroid was found to have increased in size in 34.5 per cent of the boys, and 43.4 per cent of the girls.

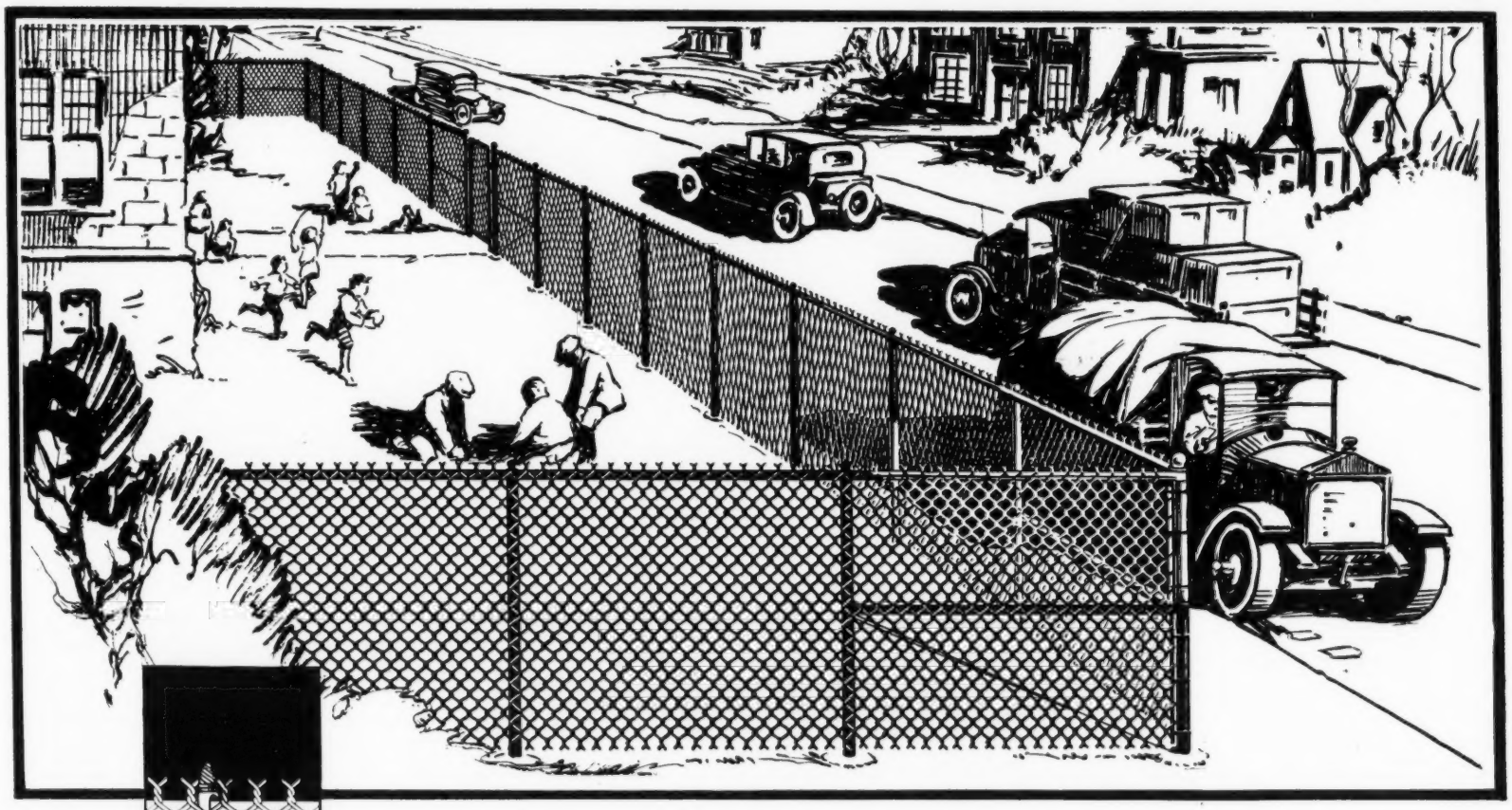
In order to learn the significance of the thyroid changes noted among children who had communicable diseases, some comparative figures were provided by making thyroid examinations of children of the same ages and environment, but who did not have communicable illness. The results of two thyroid examinations a year apart, in 1,842 boys and 1,783 girls who were not sick in the interval, showed that there was no change in the thyroid size among 48.4 per cent of the boys, and 45.6 per cent of the girls. Among 12.7 per cent of the boys, and 18.6 per cent of the girls, a decrease in thyroid size was noted. On the other hand, an increase was noted among 38.8 per cent of the boys, and 35.7 per cent of the girls covered in the study. It was noted that percentage differences in the three groups in which no changes, decreases, and increase in thyroid size are recorded, respectively, are comparatively slight. However, it was noted that slight changes were more marked among the girls. The most significant change was the increased incidence of thyroid enlargement among the girls who had had a communicable disease. Thus, among the girls who had had a communicable disease, the incidence was 43.4 per cent, while among the girls of the control group, the increase in thyroid size amounted to 35.7 per cent. This discovery leads to the conclusion that the thyroid glands of girls who have had a communicable disease are more liable to simple enlargement than are those who do not show evidence of such sickness. In the case of boys, it was noted that among those who did not have a communicable disease, there was a slightly greater incidence of thyroid enlargement than among those who did have such illness.

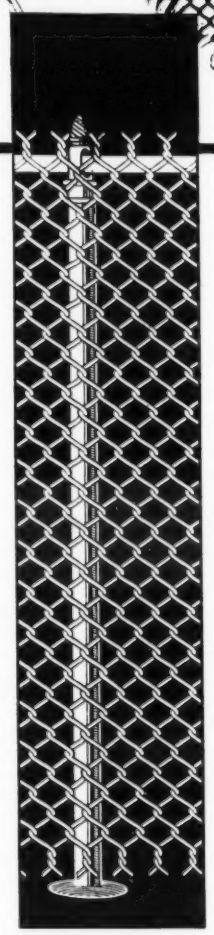
A study of the number and percentage of enlarged and normal thyroid glands among the 7,977 boys and 8,441 girls of each age show that 22 per cent of the boys and 36.9 per cent of the girls had some degree of thyroid enlargement. It was noted that most of the thyroid thickenings "very slight," "slight," and "marked enlargements" had greatly decreased in frequency in Cincinnati during the past three years. The study showed that, while there are variations in some of the curves, the general trends are the same, and that in most instances, the percentages at each age are quite close together, suggesting that the various communicable diseases are not responsible for thyroid enlargement which can be detected by subsequent examination.

In his conclusion, Dr. Olesen points out that there appears to be no relationship between endemic thyroid enlargement and certain illnesses. On the contrary, the percentages of children examined who were free from thyroid enlargement, were approximately the same as the percentages of those who had some degree of such involvement, yet the members of both groups had had the same sickness. Even where there had been a simple enlargement of the thyroid gland due to some communicable disease, it was apparent that the enlargement was temporary in character. It is concluded that, in a comparatively short time after a child recovers from a communicable disease, he is no more prone to a change in thyroid size than a child who has not had such a disease.

Insofar as elementary-school children are concerned, there appears to be no ground for assuming that the ordinary communicable diseases

(Concluded on Page 78)





Cyclone Chain Link Fence is furnished with H-Column Posts —proved by tests the strongest fence posts made. Set in reinforced concrete foundations which resist cracking from frost action.

Should A Child Be Continually Warned of Traffic Dangers?

—a question that brings out a new angle on the advantages of Cyclone Fence protection for playgrounds!

Fear has no place in the environment of a child. Psychologists say that fear implanted in children tends to make them timid; interferes with normal mental development of their delicate, high-strung minds.

The horror of traffic danger at school playgrounds is abolished by Cyclone Fence protection. It brings absolute security to the playground. Youthful minds are undisturbed by thoughts of fear, faculties are free to expand. Children enjoy the full benefit of the play hours. And there's no danger that a moment of forgetfulness may lead to tragedy.

Wherever your school is located, Cyclone Erection Service is available on short notice. Trained Cyclone men will install the fence and the Cyclone Fence Company will take complete responsibility. A Cyclone representative, who is familiar with all fence problems, will be glad to help you plan your fence. Write us.

All chain link fence is not Cyclone. This nameplate identifies the genuine Cyclone Fence.

Cyclone Fence

REG. U.S. PAT. OFF.

© C. F. Co. 1929

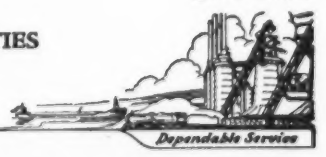
Cyclone Fence Company

GENERAL OFFICES: WAUKEGAN, ILL. BRANCH OFFICES IN ALL PRINCIPAL CITIES

Pacific Coast Division: Standard Fence Company, Oakland, Calif.

SUBSIDIARY OF

UNITED STATES STEEL CORPORATION



PRINCIPAL SUBSIDIARY MANUFACTURING COMPANIES:

American Bridge Company
American Sheet and Tin Plate Company
American Steel and Wire Company
Carnegie Steel Company
Cyclone Fence Company
Federal Shipbuilding and Dry Dock Company
Illinois Steel Company
Minnesota Steel Company
National Tube Company
The Lorain Steel Company
Tennessee Coal, Iron & R. R. Company
Universal Portland Cement Company

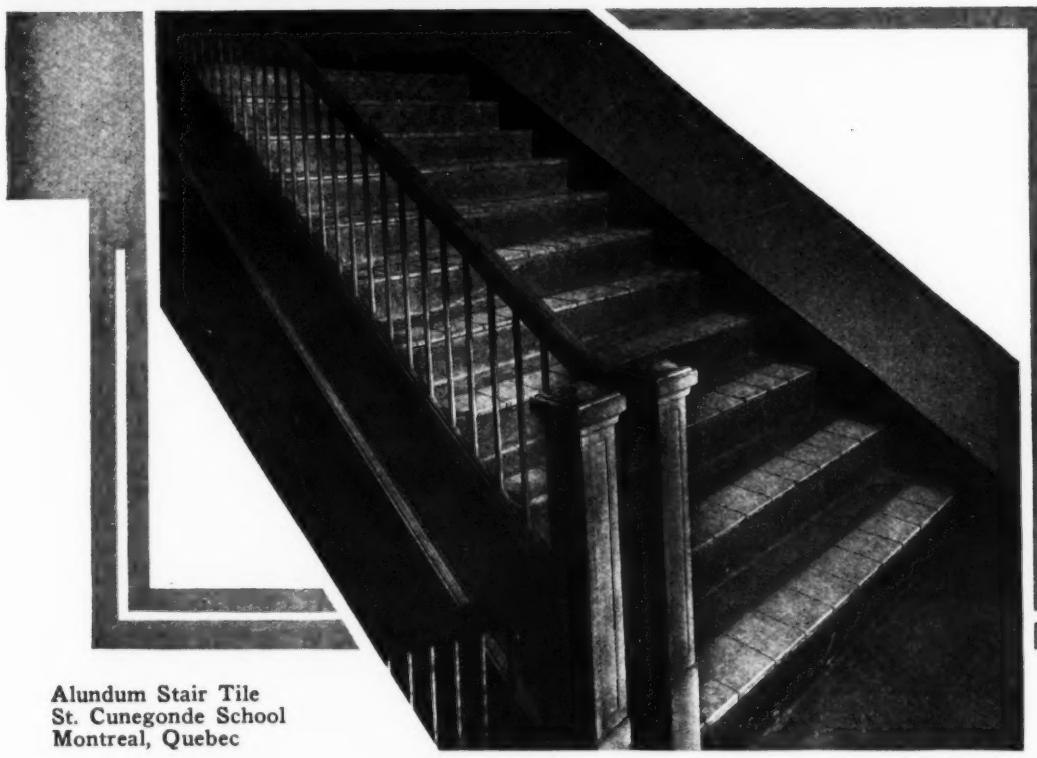
Pacific Coast Distributors: United States Steel Products Company, San Francisco, Los Angeles, Portland, Seattle, Honolulu. *Export Distributors:* United States Steel Products Co., New York City

Treads that Will Wear for Years and Years

and that will be non-slip throughout their entire life

IN NORTON electric furnaces at Niagara Falls is produced Alundum abrasive—an extremely hard and extremely tough material. Bonded into grinding wheels it will cut at amazing speed the hardest steels and steel alloys. Bonded into tile it will stand up indefinitely under the most concentrated foot traffic—even that of hustling, scuffing children.

Moreover the tile is non-slip and will remain so throughout its entire life—assuring a firm, safe footing at all times. And there are no grooves nor corrugations to encourage tripping.



Alundum Stair Tile
St. Cunegonde School
Montreal, Quebec

NORTON COMPANY, WORCESTER, MASS.
New York Chicago Detroit Philadelphia
Pittsburgh Cleveland Hamilton, Ont.

T-246

NORTON FLOORS
Alundum Tiles, Treads & Aggregates

(Concluded from Page 76)

are responsible for simple goiter. The underlying causes for this malady must be sought for in other directions.

THE RELATION BETWEEN MENTAL AND PHYSICAL STATUS OF SCHOOL CHILDREN

The U. S. Public Health Service has recently issued a report on a study of the relation between the mental and physical status of school children. In the study, a group of school children in two counties of Illinois were examined physically by medical officers of the health service, and were given mental tests by psychologists and other trained personnel of the Illinois State Institute for Juvenile Research.

In the study, a group test was used for the mental examination, supplemented by an individual test for children who had made a low score on the group test. A comparison of the group test results, with indications of school progress, such as grades repeated or skippped, average rating on the school report card, and the teacher's estimate of the child's intelligence, revealed considerable correlation between the intelligence quotient and these factors. For this reason, the intelligence quotient was taken as the indicator of the child's mental status in considering the relation of the mental and physical status of the children.

An analysis of the intelligence quotient of children classified according to certain definite factors, suggested that the intelligence quotient is definitely influenced by the child's experience, training, and other environmental conditions, including the home surroundings. It appears from the study that the intelligence quotient is an indicator of the child's present mental equipment, rather than of his native intelligence, apart from his training and experience.

In a study of the influence of physical defects, it was noted that no particular defect, with the possible exception of defective hearing, stood out as having a close relation to the intelligence quotient. The relationship between the intelligence quotient and physical defects appeared to be of a general rather than a specific nature.

It was brought out in the study that, since the intelligence tests used appear to be indicators of the total mental equipment rather than native ability alone, the slight tendency for a higher intelligence quotient associated with better physical condition and development may be interpreted in several ways: (a) The handicap due to physical defects may result in slower mental development; (b) The children who are low in mental development may tend to come from families whose innate or constitutional physical characteristics may be the result of other factors with which both are correlated, such as adverse conditions of various kinds. From the data at hand, it was impossible to determine which, if any, of these interpretations is correct.

HYGIENE AND SANITATION

—A committee of the Sedgwick County Medical Society, Wichita, Kans., has worked out a plan for the physical examination of pupils in the Wichita schools, some 3,000 of whom have been examined annually without charge in order that the physically fit might enroll in gymnasium classes. With the work about half completed this year, the physicians stopped making the examinations, until a plan satisfactory to both the society and the city could be arranged.

It appears that, while the physicians had been doing the work without charge, the dentists of the community were paid for their services to the school children. The members of the medical society agreed to finish the examinations this year in the hope that the committee and the board would eventually reach a satisfactory adjustment of the matter for next year.

—The school board of Hamburg, Iowa, in cooperation with the local Kiwanis club, has inaugurated annual medical and dental inspections for the school children of the town. Local physicians and dentists have donated their services for the work. The examinations for the current school year were conducted in October.

—The American Child Health Association of New York City, has completed a study showing that the pasteurization of milk is essential in order to avoid milk-borne diseases, of which undulant fever is the latest source as revealed in raw milk. The study revealed that in 1928, there were 560 cases of undulant fever in more than forty states, of which the largest number was reported by Iowa.

The study brings out the fact that, since the source of the contagion is milk, the disease may be prevented by rendering the milk supply clean and safe. The consensus of opinion is that pasteurization at the standard temperature is completely effective in eliminating the organism causing undulant fever. The situation calls for legal responsibility on the part of municipalities for the protection of the milk supply against milk-borne epidemics.

—Neenah, Wis. Beginning with the new year, the office of public health nurse will be under the direction of the city health board, instead of the board of education, which has formerly directed the activities of the nurse.

Under the new plan, the two boards will cooperate in such a manner that public-school pupils will receive attention from the public health nurse.

—Sterling, Ill. A full-time nurse has been employed for the first time this year.

—Spring Valley, Ill. A full-time nurse has been placed in charge of the elementary schools this year.

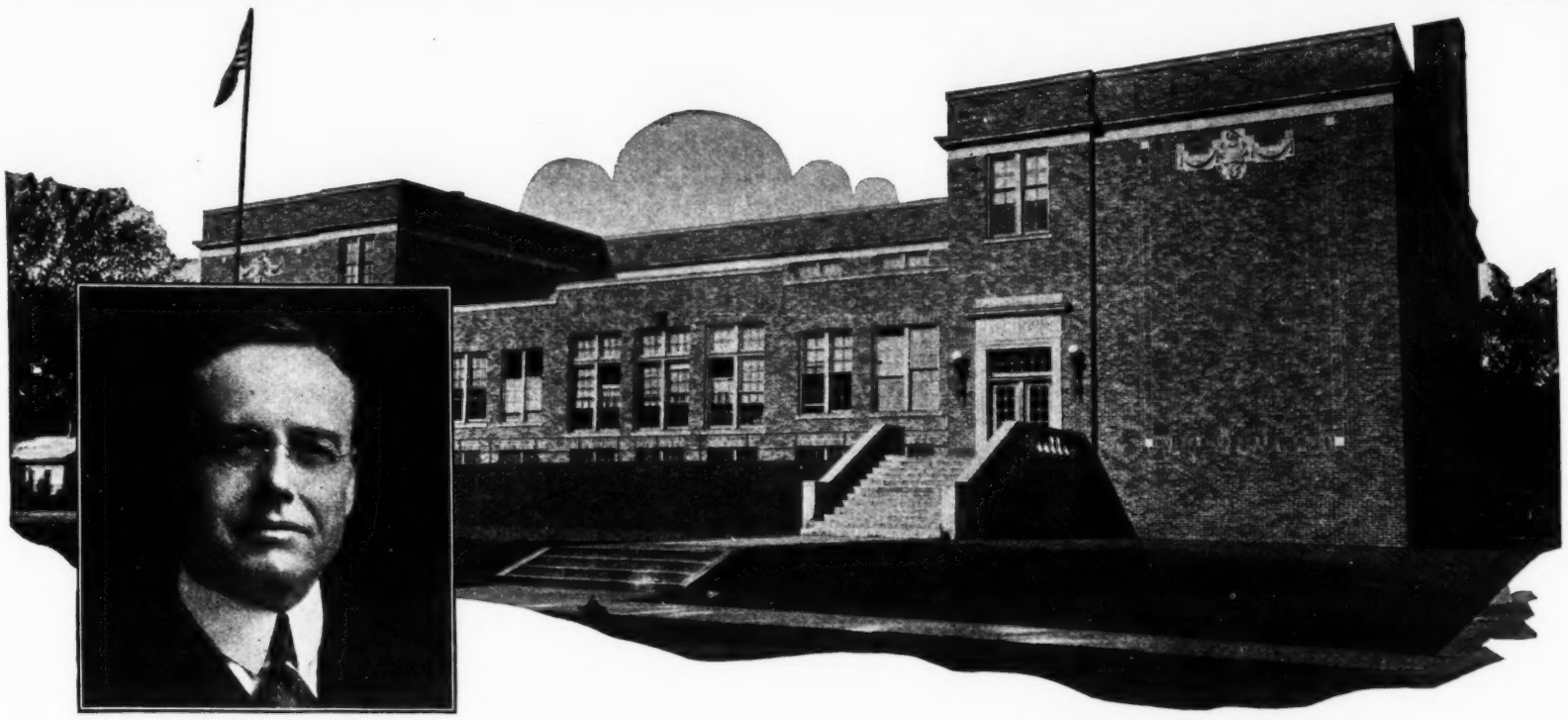
—Prairie du Chien, Wis. The legal battle between the two school boards and their two superintendents of schools has been encumbered further with a writ of mandamus to show cause why the elective school board, its secretary, and superintendent, should not be paid salaries.

The dispute which has been going on for some time, began when a retiring school board gave Mr. A. O. Eagan a three-year contract as superintendent of schools. A newly elected board hired Mr. B. A. Kennedy to act in that capacity. Eagan then obtained an injunction to prevent the city officials from interfering in his school opening. Vouchers for the payment of salaries went to the elective board for approval, and this board has refused to pay Mr. Kennedy and his assistants.

—Ansonia, Conn. The school board recently discussed the matter of transportation of school children, particularly with reference to liability insurance. Under a new law passed recently, the liability is placed on the municipality. In former years, the contractor who carried the pupils was obliged to carry insurance.

—Minneapolis, Minn. The school board has approved a recommendation of one of its members that steps be taken to standardize the prices of articles sold to pupils in the schools. The work of standardization will be handled through the business department.

—Bay City, Mich. The school board has authorized Supt. G. L. Jenner to reorganize and improve the research department to extend its usefulness and to make it more efficient. Superintendent Jenner plans to limit the testing to diagnostic and corrective work. A director and assistant will be employed to have charge of the testing of school subjects.



MR. CHARLES W. KLINE

Hawthorne Grade School, Waterloo, Iowa
Mortimer B. Cleveland, Architect, Waterloo, Iowa

"Hard Maple Floors *provide everything that school use demands"*

says CHAS. W. KLINE, *Superintendent*
Waterloo (Iowa) Public Schools

"The Board of Education has specified Hard Maple Flooring in all of our schools that have been built since 1912.

"Personally, I am inclined to think that no other flooring can give as much service and satisfaction as Hard Maple. It provides everything that school use demands—comfort, long wear, cleanliness. We have been very well satisfied with these floors in our schools."

Thus Charles W. Kline, Superintendent of the Waterloo (Iowa) Public Schools, reiterates the opinions of many other school officials and architects in every section of the country.

Back of the widespread use of Northern Hard Maple in school buildings is the fact that this is the one flooring material which combines warm, dry, cushioning comfort with the qualities of lasting wear which school use requires.

This resilient flooring material is remarkably tough-fibred and tight-grained. It will not sliver or splinter. Scuffing, youthful feet and the moving of equipment only make it smoother with time. Northern Hard Maple, moreover, because of its permanent smoothness, is exceptionally easy to clean and keep clean. It offers no open lodging places for dust and germ-laden dirt to collect. And it permits quick, simple, permanent anchorage for seats, or re-arrangement of seats at any time.

Hundreds of school boards have been guided by these facts in selecting flooring. They have chosen Hard Maple for classrooms, corridors, gymnasiums, assembly halls. Consult your architect about Northern Hard Maple.

Members of the Maple Flooring Manufacturers Association have contributed many thousands of dollars and years of work to standardize and improve the manufacture and grade uniformity of Northern Maple, Beech and Birch Flooring. The following manufacturers only are licensed to use the Association Trade-mark MFMA. Specify MFMA on the flooring you use.

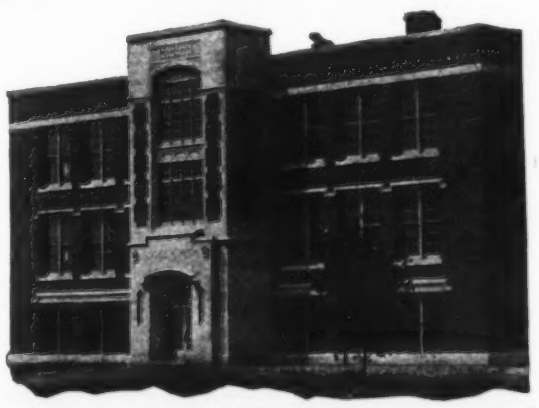
Bruce, E. L. Co. (Mill at Reed City, Mich.)	Memphis, Tenn.
Cobbs & Mitchell, Inc.	Cadillac, Mich.
Cummer-Diggins Company	Cadillac, Mich.
Flanner Company	Blackwell, Wis.
Foster-Latimer Lumber Co.	Mellen, Wis.
Hettler, Herman H. Lumber Co.	Chicago, Ill.
Holt Hardwood Company	Oconto, Wis.
Mitchell Brothers Company	Cadillac, Mich.
Nichols & Cox Lumber Co.	Grand Rapids, Mich.
North Branch Flooring Co.	Chicago, Ill.
Northwestern Cooperage & Lumber Company	Gladstone, Mich.
Oval Wood Dish Corporation	Tupper Lake, N. Y.
Robbins Flooring Company	Rhinelander, Wis.
Sawyer Goodman Company	Marinette, Wis.
Soo Lumber Company	Glidden, Wis.
Stephenson, I. Co. Trustees	Wells, Mich.
Ward Brothers	Big Rapids, Mich.
Wells, J. W. Lumber Company	Menominee, Mich.
Wisconsin Land & Lumber Company	Hermansville, Mich.

Let our Service and Research Department assist you with your flooring problems . . . Write us.

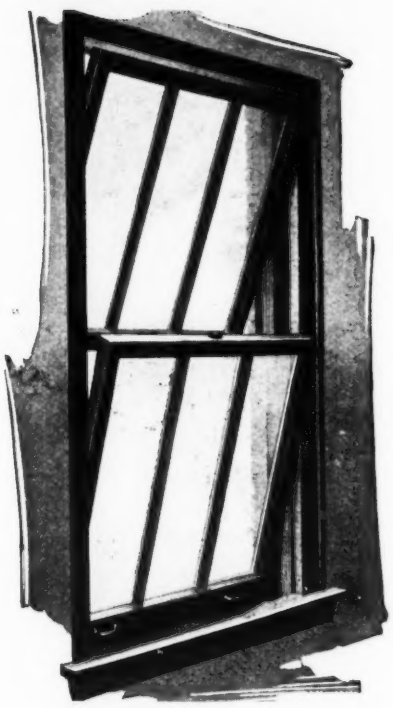
MAPLE FLOORING MANUFACTURERS ASSOCIATION
1780 McCormick Building, *Chicago*

The letters **MFMA** on Maple, Beech or Birch Flooring signify that the flooring is standardized and guaranteed by the Maple Flooring Manufacturers Association, whose members must attain and maintain the highest standards of manufacture and adhere to manufacturing and grading rules which economically conserve these remarkable woods. This trade-mark is for your protection. Look for it on the flooring you use. **MFMA**

Floor *with* Maple



Roosevelt School, Waterloo, Iowa



CONTROLLED VENTILATION THAT ELIMINATES DANGEROUS DRAFTS

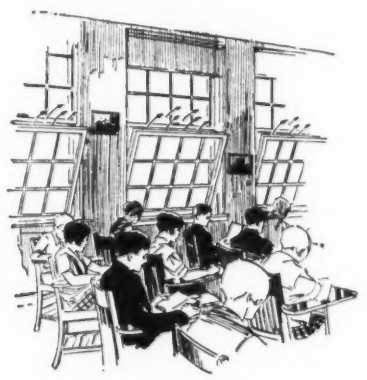
FRESH air must be properly directed to ventilate the schoolroom adequately. Health authorities agree that open windows that create drafts and fluctuating room temperatures, are a menace to the health of the pupils. Williams Reversible Window Equipment gives *controlled ventilation* allowing the windows to be tilted at any desired angle. Cold winter winds are deflected to the top of the room thus eliminating dangerous drafts.

Besides providing ideal draftless ventilation, Williams Reversible Window Equipment enables windows to be cleaned from the *inside* safely and at a considerable saving in cleaning costs. Write for details and list of modern school building installations.

THE WILLIAMS PIVOT SASH CO.
E. 37th St. at Perkins Ave., Cleveland, Ohio.

For 25 years manufacturers and installers of Williams Reversible Window Equipment.

WILLIAMS REVERSIBLE WINDOW EQUIPMENT
Clean Your Windows from the Inside



Superintendents

SALARIES OF COUNTY SUPERINTENDENTS IN THE UNITED STATES

While the salaries of county superintendents throughout the United States are now generally higher than in 1922, and the educational requirements show some improvement over past years, it is a fact that the salary is one of the important factors in determining the type of persons available for rural-school administrative positions. Until the salaries, appointment, and administrative conditions obtaining for rural-school administrators are more favorable and resemble more nearly the excellent conditions prevailing in the cities, it will not be possible to influence to any great extent the quality of superintendents attracted to county and other rural-school administrative positions.

A recent study of "Salaries and Legal Regulations Governing the County Superintendency in the United States," made by Miss Katherine M. Cook, of the division of rural education of the U. S. Bureau of Education, presents some pertinent information concerning the qualifications, salaries, and status of the county superintendent. As a result of the comparisons indicated in the study, it is quite evident that there are significant disparities between the salaries of city and county superintendents, and that the salary situation as it affects the rural-school superintendents leaves much to be desired at the present time. While commendable improvement in salaries is indicated within a given group over a period of years, still this is not conclusive evidence as Miss Cook writes, that the improvement is adequate when compared with similar improvement in similar situations outside the immediate group. The salaries as given in the study indicate a wide differential in favor of city superintendents. Median salaries in each of the four population groups are decidedly in favor of the cities, a situation which has a tendency to limit the number of candidates willing to prepare for rural administrative positions. The dearth of high-salaried places in the county superintendencies means that successful administrative officers, like successful teachers, gravitate to the cities after serving a probationary period in the rural schools.

The report shows the number of superintendents in each state receiving annual salaries within $500 intervals, beginning with a minimum of $500 and extending to $6,500. It also gives the salary intervals in which the maximum, minimum, or median salary, respectively, is paid in each state.

In 42 states, statutory provisions of some kind prescribe the way in which salaries of the county or other rural-school superintendents are fixed, or the sources from which they are paid. The salaries of supervising agents in Connecticut and of the assistant state commissioner of Delaware are fixed by the respective state boards of education. In the remaining 4 of the 48 states (Maine, Rhode Island, Tennessee, and Utah) they are fixed by the local boards of education.

For the United States as a whole, it is shown that the salaries of county superintendents are most frequently between $1,500 and $2,000. The median salary of superintendents in 1922 fell within the interval $1,500 to $2,000 in 19 states; in 1928, in 18 states. In 9 states (Colorado, Georgia, Kansas, Michigan, Oklahoma, Oregon, South Carolina, Washington, and Wyoming) the median salary has been raised $500 since 1922 when the median salary was within the interval $1,000 to $1,500. In 1928, it is within the salary interval $1,500 to $2,000. In Kentucky, in 1922, the median salary interval was $500 to $1,000; In 1928, it is $2,000 to $2,500. Twenty-one states dian interval in these states was $1,000 to $1,500. In 1928, it is $2,000 to $2,$00. Twenty-one states in 1928, as compared with 7 in 1922, pay $2,500 or more as a median salary. In 5 states in 1928, the median salary was $3,500 or more; in only one state was so high a median found in 1922.

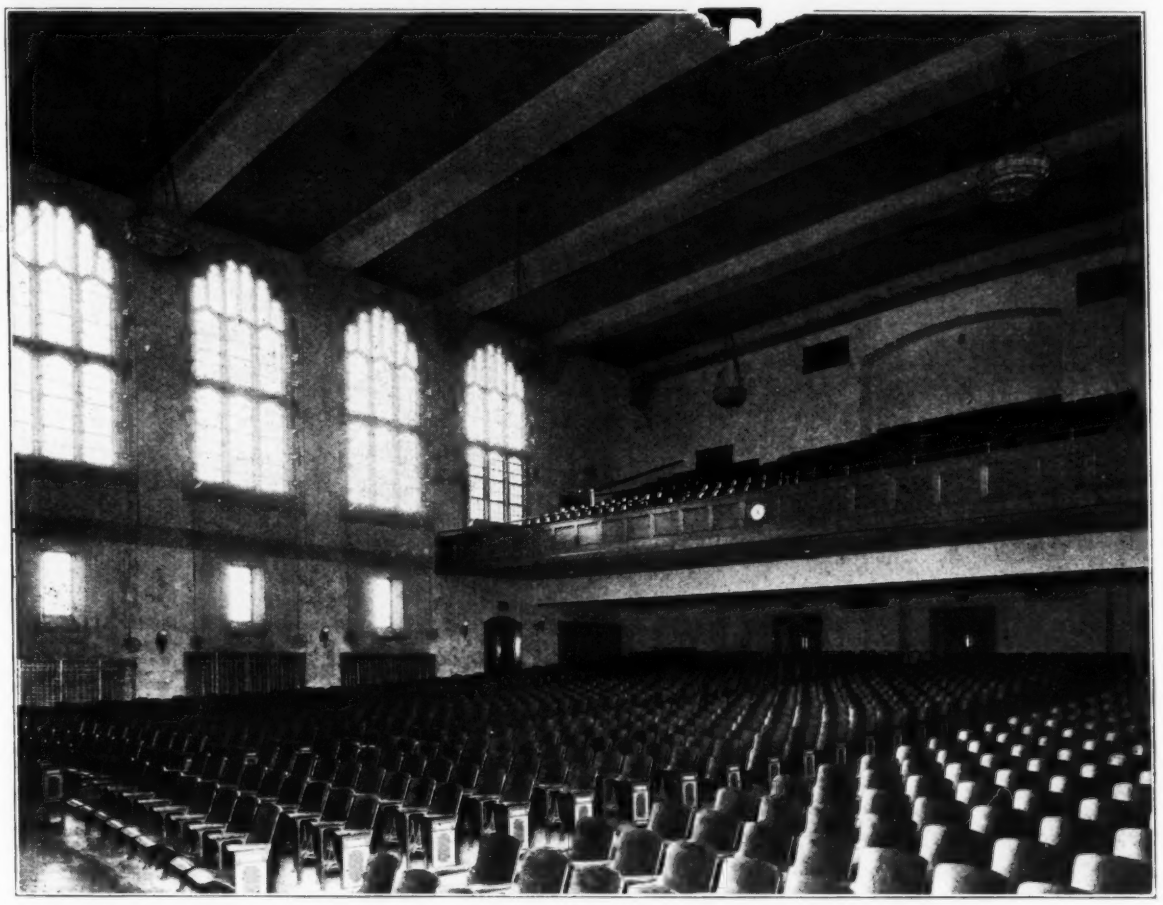
The states in which the minimum salary in 1922 was very low have made noticeable progress in the improvement of salaries. The number of states in which the minimum is less than $500 has decreased from 12 to 6 during the six-year period from 1922 to 1928. The number of states in which the minimum is between $1,000 and $1,500 increased from 11 in 1922, to 13 in 1928. In 16 states, the minimum is higher than in 1922. Minimum salaries in 8 states in 1928 are above $2,500, a figure reached by only 2 states in 1922.

The maximum salaries paid in the several states, as indicated by the report, show that while the maximum salary is still lower in Wyoming than in any other state, the salary interval in which it falls is $500 higher than in 1928 than in 1922. The number of superintendents in the higher salary levels is small, and in most instances, the high salary is due to the fact that a large city is included in the taxation territory. A maximum salary of $4,000 or more prevails in more than half of the states.

The report gives comparative figures for salaries paid to superintendents of cities and counties in certain designated population limits. The study follows the common practice of grouping cities and counties according to population. Four groups are represented, namely, cities and counties of 2,500 to 5,000; of 5,000 to 10,000; of 10,000 to 30,000; and 30,000 to 100,000. In the group of 2,500 to 5,000 population, the median salary of the city superintendents is $3,380, and that of county superintendents, $1,500. No city superintendent receives less than $1,800; but 92, or 79 per cent, of the county superintendents in the group receive $1,700 or less. Only one of the 116 county superintendents receives a salary as high as the median salary of the city superintendents in the group.

In the second group, 5,000 to 10,000 population, practically all the city superintendents in the group, 99 per cent, receive $3,000 or more; only 5.2 per cent of the county superintendents

(Concluded on Page 83)



Type B Acousti-Celotex was applied to the ceiling of this auditorium in the Western High School, Baltimore, Maryland, to provide perfect acoustics for every purpose and has proved its effectiveness beyond question. Joseph Evans Sperry, Architect.

Every spoken word .... every note of music Clearer *and more* Distinct

In the great Auditorium of the Western High School, Baltimore, Maryland, ceilings of Acousti-Celotex subdue all distorting echoes.

JOSEPH EVANS SPERRY, Architect, showed the school authorities of Baltimore an easy and economical way to assure perfect acoustics in this beautiful auditorium. Acousti-Celotex, the noise-absorbing, fibre tile, was applied to the ceilings.

Today in this enormous room, voices and music from the stage are heard easily and comfortably in the farthest seats. Distorting echoes are instantly absorbed by Acousti-Celotex and reverberations no longer turn notes and syllables into a jumble of sound.

Acousti-Celotex is being used in hundreds of schools and colleges to secure better conditions for teaching and studying . . . to insure *less noise and better hearing* in lecture and recitation rooms . . . to provide perfect quiet in study halls.

In your own buildings this remarkable material will help you secure a higher standard of work from your student body . . . help make entertainments and assemblies enjoyable . . . and quiet the disturbing racket in corridors, classrooms, gymnasiums, manual training shops and cafeterias.

For new or old buildings

Acousti-Celotex is quickly and easily applied in either new or old buildings. No remodeling is necessary. For the fibre tiles are fastened directly to existing walls and ceilings.

Acousti-Celotex comes to you in single, finished units, durable and permanent. It is the *only* acoustical material that can be painted and repainted, even using lead and oil paints, *without impairing its echo-absorbing efficiency.*

The word CELOTEX (Reg. U. S. Pat. Off.) is the trade mark of and indicates manufacture by The Celotex Company Chicago, Illinois

Simply submit your acoustical problems to the acoustical engineers of The Celotex Company for analysis and recommendation. The reliability of their calculations has been checked and proved in hundreds of installations. You will receive their advice promptly and without further obligation.

Mail the coupon below for our new folder, "Better Study Conditions in Schools," giving more information about Acousti-Celotex.

THE CELOTEX COMPANY
919 North Michigan Avenue
Chicago, Illinois

Mills: New Orleans, Louisiana
Branch Sales Offices in many principal cities
(See telephone books for addresses)

In Canada:
Alexander Murray & Co., Ltd., Montreal
Acousti-Celotex is sold and installed by approved Acousti-Celotex contractors

THE CELOTEX COMPANY, A.S.B.J.—11-29
919 N. Michigan Avenue, Chicago, Illinois.
Gentlemen: Please send me your interesting new folder, "Better Study Conditions in Schools."

Name .....
Address .....
City ..... State .....

ACOUSTI-CELOTEX
FOR LESS NOISE—BETTER HEATING

Public Library, Houston, Texas. Wm Ward Watkins, *City Architect.* Cram and Ferguson, Boston, *Associate Architects.* International Tile Co., *Tile Contractors.*

Making schools more CHEERFUL

IN keeping with the trend toward the increased use of color in school buildings, architects are depending more and more upon tiles and especially upon Romany Quarry Tiles. Through this medium is obtained the cheerful atmosphere which color creates. Romany Rainbow Tiles in shades of brown, tan, and russet, or Romany Redflash in tones of red and gunmetal, help brighten up classrooms, libraries, stairways and corridors.

Where durability and economy are equally important factors, there, too, Romany Quarry Tiles demonstrate their superior value. They are so hard that they withstand the blows and thumps of ordinary service throughout the life of the building.

Economical in first cost, cleaned with the utmost ease, requiring no painting or varnishing, Romany Tiles become an ever increasing source of satisfaction.

Stairway, Cleveland Heights High School, Cleveland Heights, Ohio. Franz C. Warner and Walter R. McCornack, *Architects.* Wadsworth-Addison Co., *Tile Contractors.*

ROMANY TILES

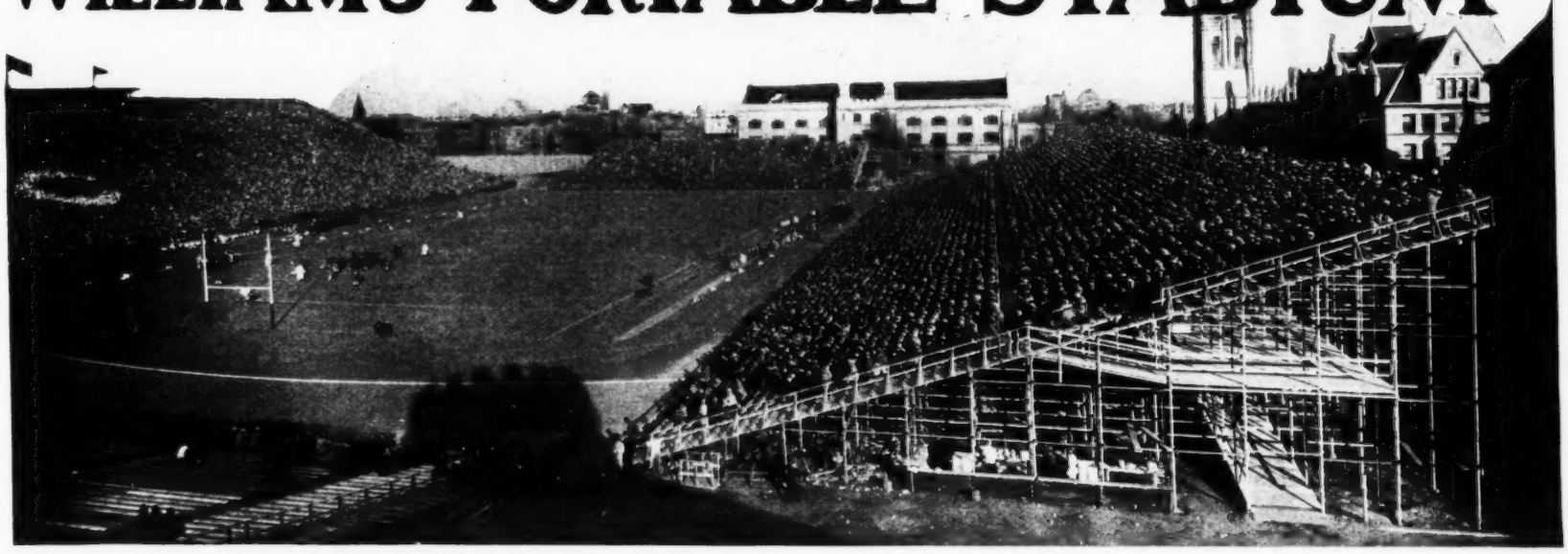
MANUFACTURED BY

UNITED STATES QUARRY TILE CO. PARKERSBURG, W. VA.

MEMBER ASSOCIATED TILE MANUFACTURERS

KERAMIC TILES

WILLIAMS PORTABLE STADIUM



At Chicago University

The Williams Portable Stadium seating ten thousand people was erected in 1923.
This economical seating was so well liked, so easily handled without any loss of parts or material that it has remained as a permanent stand, without repairs, as a testimonial to the quality and engineering design.
Yet it can be dismantled at anytime and moved by truck—1,500 seats to the five ton model, at extremely low cost.

We can do the same for you.

WILLIAMS IRON WORKS Inc.

430 EAST 102 nd St. IRON WILLIAMS INC WORKS **NEW YORK, N. Y.**

(Concluded from Page 80)

receive as much. Three city superintendents, as compared with 266 county superintendents, or 86 per cent of the number represented receive less than $2,400 annual salary. Only three county superintendents reach or exceed in salary the median paid city superintendents. The medians are $4,026 and $1,800 for cities and counties, respectively.

In the 10,000 to 30,000 population group, half the city superintendents receive more than $4,765, while fewer than 2 per cent of the county superintendents receive $4,600 or more. More than half the county superintendents receive less than $2,100. In the 30,000 to 100,000 population group, only four county superintendents receive as much as $6,000, while 73 per cent of the city superintendents receive $6,000 or more. The respective medians are $6,428 for city superintendents, and $3,300 for rural.

The term of office of county and other rural school superintendents varies from 1 to 5 years. In most cases the term is fixed by law for all the counties in the state. In South Carolina, it is fixed by individual counties; a few counties have two-year terms, but the four-year term prevails in the majority. In Delaware and Connecticut, the term is fixed by the state board of education, and in Maine, New Hampshire, Rhode Island, and Vermont, by local boards of education. The term of office has been increased in three states since 1922. In the states in which the county superintendent is an elective officer the term is two or four years. In 12 of the states in which the term is two years, and in 14 of those in which it is four years, selection is by election at large. In two appointive states, it is two years; and in 7, four years. In 14 states the term is two years; in 21, four years.

PERSONAL NEWS OF SUPERINTENDENTS

—Supt. J. W. Carrington of Cairo, Ill., has been reelected for a fourth consecutive term. Mr. Donald R. Alter was reelected as principal of the high school for a second year.

—Mr. Albert A. Thornton has assumed his duties as superintendent of schools at East Greenwich, R. I.

—Mr. H. W. Holmes, of Cass City, Mich., has assumed his duties as superintendent of schools at Marshall. Mr. Holmes is a graduate of the Kalamazoo State Teachers College and holds an A.B. degree.

—Mr. B. A. Gimmestad, of Brewster, Minn., has assumed his duties as superintendent of schools at Dawson.

—Mr. Harley E. Talley, of Bartholomew county, Ind., has been appointed director of statistics, reference, and research for the state of Indiana, succeeding Eugene B. Butler.

—Mr. V. L. Tatlock, of Lebanon, Ind., has been elected as principal of the high school at Bloomington, succeeding H. E. Binford, who has gone to Louisville, Ky.

—Dr. Joseph C. Brown has assumed his duties as superintendent of schools of Pelham, N. Y., succeeding W. Howard Pillsbury, who has gone to Schenectady. Dr. Brown was, for two years, president of the Northern Illinois Teachers' College at DeKalb.

—Mr. John T. Kaemmerlen has taken up his duties as superintendent of schools at Catskill, N. Y., succeeding Edward D. Myers, who has gone to Haverstraw.

—Dr. Herbert S. Weet, of Rochester, N. Y., has been granted a six months' leave of absence by the board of education in order that he may recuperate from his recent illness. Mr. Joseph O'Hern will be acting superintendent in charge during Dr. Weet's absence.

—Dr. Hermann Cooper has been appointed as principal of the State Normal School at Fredonia, N. Y.

—Mr. Lloyd L. Cheney, director of the administration division of the New York State Education Department, has been given the honorary degree of doctor of pedagogy by the New York State College for Teachers. The degree was given in recognition of Mr. Cheney's distinguished work in connection with the administration of the educational work of the state.

—Mr. E. R. Van Kleeck has been reelected as superintendent of schools at Walden, N. Y.

—Mr. George H. Potter, formerly of Preston, Minn., has taken up his duties as superintendent of schools at Chatfield. Mr. Potter had completed five years of service at Preston.

—Mr. Ellis A. Manship of Spartanburg, S. C., has been reelected as principal of the Port St. Joe High School.

—Prof. Fletcher Harper Swift, of the School of Education, University of California, has resumed his duties in Berkeley, after having spent the past year in Europe studying the policies of financing educational institutions on the continent. Professor Swift's researches were made possible by a gift of $3,500 from the General Education Board.

—Mr. C. S. Dalton, of Brunswick, Nebr., has been elected superintendent of schools at Waterbury.

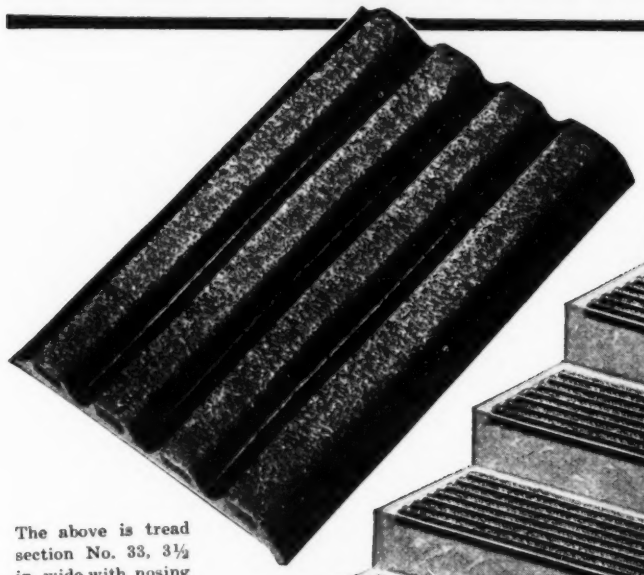
—Miss Cora Pearson, formerly supervisor of elementary education in the state education department at Montgomery, Ala., has taken up her duties as a member of the staff in the State Normal College of Florence. Miss Pearson is a graduate of the Troy Normal College and has enjoyed a wide experience in schoolwork in the state. She had directed the state program of elementary education and had served as a member of the state textbook commission.

—Mr. L. D. Randall has taken up his duties as superintendent of schools at Cass City, Mich. Mr. Randall succeeds Mr. H. W. Holmes, who has gone to Marshall.

—Supt. F. E. Crawford, of Vandalia, Ill., is serving his third year as head of the school system.

—Mr. Karl Langdon Adams has been appointed president of the State Teachers College at DeKalb, Ill., succeeding Mr. J. C. Brown. Mr. Adams has had an extended career as a teacher and administrator. He holds degrees given by Ohio University and Teachers College of Columbia University, and is completing work leading to a doctor's degree. He was an instructor for eleven years in the State Teachers College of St. Cloud, Minn., and for the last four years was assistant to the president and assistant director of the summer school.

SAFE STAIRS—WITH WOOSTER TREADS



The above is tread section No. 33, 3½ in. wide with nosing and angle back.

YOUTHFUL feet that scamper up and down stairs are often careless feet. Worn, slippery stairs constantly menace the safety of those who use them. Wooster Safe-Groove Stair Treads with wide ribs of abrasive grits completely eliminate the danger of slipping and falling. Deep narrow grooves catch pencils, chalk and other stairway litter that frequently causes slipping accidents.

Wooster Safe-Groove Treads resist the grinding wear of heavy traffic and keep stairs looking neat and trim. They are easily installed on stairs of any material.

THE SAFETY STAIR TREAD CO.
P. O. BOX 198 C WOOSTER, OHIO

WOOSTER
SAFE-GROOVE STAIR TREAD

BUILDING NEWS OF THE SCHOOLS

A STUDY OF THE MAXIMUM SIZE OF SCHOOL BUILDINGS

During the recent summer session of the University of Minnesota, an investigation as to the best maximum size of school buildings was made, under the direction of Dr. George F. Womrath, of Minneapolis. Questionnaires were sent to 96 cities and 31 replies were received. A few of the cities to which the questionnaire was sent were Atlantic City, Chicago, Denver, Des Moines, Detroit, Grand Rapids, Lansing, Minneapolis, Newark, New York City, Pittsburgh, Providence, St. Paul, and Trenton.

As a result of the study, it was brought out (1) that the required number of children reside within the desirable radius of the school, and (2) that the efficiency of a school building increases with the increase in the size of the building and pupil enrollment until the law of diminishing returns begins to operate. The study resolved itself into a question as to where the law of diminishing returns begins to operate.

The conclusion reached as to the best maximum sizes of buildings were as follows:

Elementary schools (grades 1–6)	1,100
Junior high schools (grades 7–9)	1,400
Senior high schools (grades 10–12)	1,900

It was the consensus of opinion that schools of the above sizes offered special advantages in the way of better classification of pupils, greater and better efficiency in supervision, more and better activities, greater economy in administration, and a finer community spirit.

CARE OF WINDOW SHADES

With the opening of new buildings and the equipment of many other rooms with new window shades, the school board of Cincinnati, Ohio, repeated its directions for the care of window shades. The directions were prepared by Miss Lawes, director of the sight-saving department, and were intended to make certain that the shades are adjusted from time to time, and to protect teachers and pupils from defective eyesight caused by faulty or inadequate lighting. The directions which embody the approved procedure with reference to good lighting, are as follows:

1. On cloudy days, and when the sun does not shine in the window, roll both shades to the middle of the window, leaving the entire glass area exposed. Do not turn on the artificial light until all the available natural light has been used.

2. On bright days when the sun strikes the desks near the windows, lower the bottom shade.

3. Keep the upper shade down from the top as much as possible. The best lighting is that which comes from the top of the windows and is reflected down from the ceiling. Raise the upper shade only when it is necessary to protect the pupils from the direct rays of the sun.

4. Shades should be adjusted frequently during the day. A child may be assigned to this duty. Do not jerk the cords. Hold the cord to one side and let go. It will catch.

5. Window shades should never be left as adjusted by the janitor at night. On entering the room in the morning, teachers should uncover the whole window, and then make such adjustments as may be necessary to shut out the direct sunlight. Adjust early and often.

GREAT NECK HIGH SCHOOL EQUIPPED FOR RADIO PROGRAMS

A complete school radio equipment has been installed in the new high school in Great Neck, L. I., New York, which makes it possible not only for the principal to talk to any one or a group of classrooms, but also to distribute a given educational or entertainment program from phonograph record or station to any designated room. The innovation, which has been thoroughly tested, had its first trial with the opening of the school term in September.

The equipment which has been installed in the auditorium, consists of three powerful dynamic speakers, placed in each organ loft of the stage, these directing the sound waves toward the audience. Adjustments have been made so that adequate volume, with perfect modulation, is possible. Effects have been obtained that duplicate in volume, range, and distinctness the music from an organ or an orchestra.

Under the arrangement, there are no individual receiving sets in the classrooms. Instead, 44 loudspeakers bring the program to the students in each room. Individual adjustments can be made so as to control the volume to suit the size of the room and its acoustics. Two channels have been provided, so that teachers have the choice of two programs, and either or both channels may be connected to a microphone or program.

When operating as a general address system, either one or both of the channels may be plugged in for announcements from the principal's office. By a system of switches, which cut in or out of any room desired, the speaker can choose his audience at will. Each small switch connects with a loudspeaker, so that it takes only a minute to cut in every speaker for addressing the entire school.

For special announcements in the open, such as during games and fetes, a large speaker mounted on a small rolling truck has been built. It is now in the school lunchroom, where it supplies the music for students.

The main switchboard and microphone are located in the principal's office. Several additional microphones are available for the stage and for outdoor work. A large amplifier has been built to feed to the loud speakers for music or speeches picked up by the microphones or the phonograph pickup. With the aid of 64 tubes, it provides amplified signals to 44 speakers and eight power dynamic speakers.

The entire apparatus, including the volume control and the switches, is placed on four separate panels, contained within an iron frame, and measuring 6 by 7 ft. in size. The instrument board is located in the wings off the auditorium stage.

BUILDING NEWS

—Sonora, Texas. The school board will shortly begin the construction work on the new high school, which is to be erected at a cost of $125,000. The building which will be two stories in height, will provide accommodations for twelve study and classrooms and an auditorium.

—The attorney general of Texas, recently approved a bond issue of $6,000 for a school in the Patsville school district of Hamilton county.

—The Texas State Board of Education recently purchased all the school-district bonds of the several school districts and counties, totaling $324,700. The largest bond issue was $35,000, and the smallest was $800.

(Continued on Page 86)

Quiet, Foot-Easy Tile that Lasts for Years

IN THIS modern day, when human efficiency counts so much, restful sound-deadening floors are a recognized asset. That is one reason why floors of Duraflex Tile are so frequently specified by foward-looking architects, builders and property owners. Duraflex Tile is a mastic tile—resilient, easy on the feet—quiet, easy on the nerves. So shock-absorbent that even hurrying office workers speed over it with the silence of a cat!

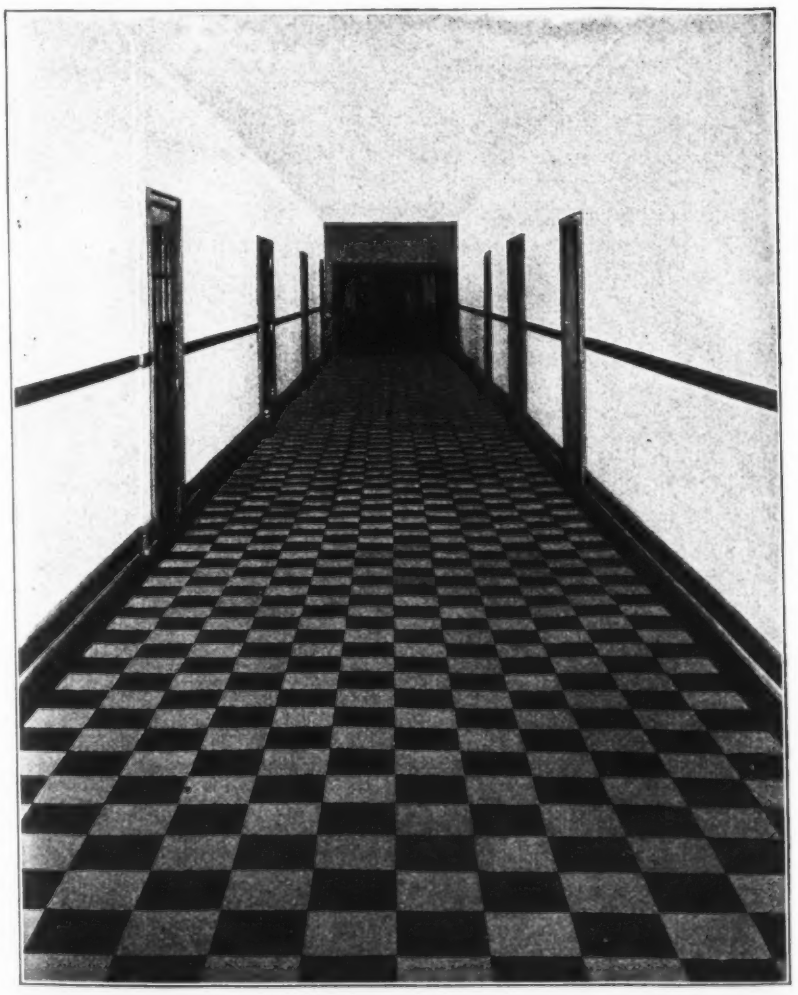
As for long wear, Duraflex challenges the entire resilient tiling field. This tile will hold up under years of pounding feet and is impervious to acids, alkalies, fire or water. It is made of the same resilient and wear-resistant ingredients as Duraflex-A—the well known ductile flooring material that has won wide-spread approval because of its unusual durability.

The chief difference between Duraflex Tile and Duraflex-A Flooring is that the composition has been allowed to set beforehand for cutting into individual tiles. Thus the floors can be used immediately after laying, and attractive decorative patterns may be obtained by contrasting colors.

Duraflex Tile comes in soft shades of red, tan, brown, green, gray and black. The pigment is blended in the tile, not merely on the surface —therefore, all colors are absolutely wear-proof and fade-proof. It is easy and economical to keep clean and sanitary because its smooth surface does not absorb foreign matter. When waxed, it has the beautiful lustre of highly polished leather.

For floors in schools, hospitals, office buildings, apartment houses, churches, institutions, etc., Duraflex Tile is especially recommended. On request, we shall gladly send you Color Chart of different patterns, with other detailed information. For a solid, seamless, one-piece floor surface, ask also for data on Duraflex-A. The Duraflex Company, Inc., Baltimore, Md. Offices in principal cities.

A Duraflex Tile installation in the Liverpool High School, Liverpool, N.Y. Earl Hallenbeck, Architect, Syracuse, N.Y.



DURAFLEX
MASTIC TILE
and
DURAFLEX-A FLOORING

DAYTON
Safety Ladder
(Patented)

They Work Faster.... Better!

Because your painters, cleaners and repairmen know they are perfectly SAFE on a Dayton Safety Ladder, they work faster and better—thereby reducing your maintenance costs. The Dayton is made of airplane spruce, is light, strong and durable. Will not tip or collapse. Permits close work against walls. Sizes 3 to 16 feet. Moderately priced.

Type "B" Dayton Ladder

A "little brother" to Type "A" shown at left. A general purpose, popular priced safety ladder. Seven sizes.

Write Dept. ASBJ-11 for complete information

THE DAYTON SAFETY LADDER COMPANY
121-123 West Third Street, CINCINNATI, OHIO

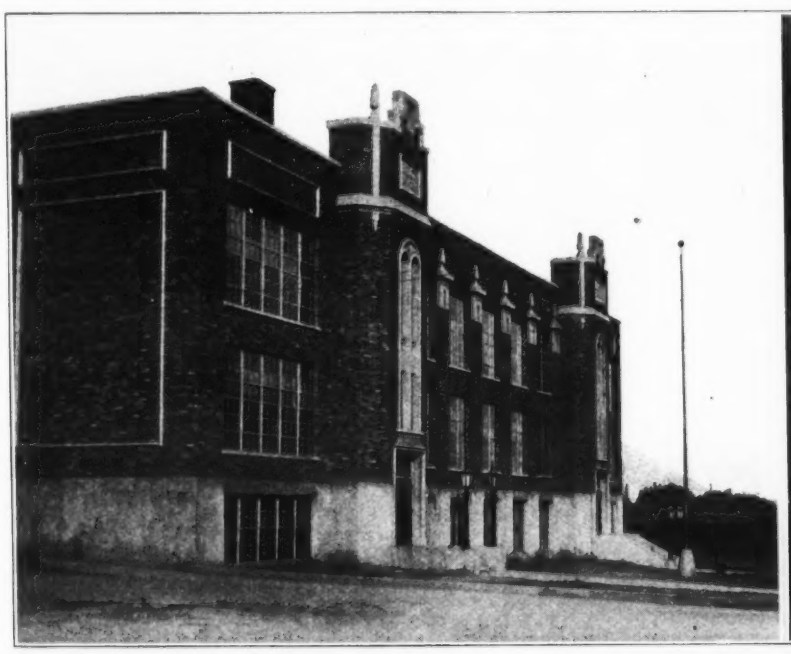
Stock carried by Pacific Coast Representative, Bullard-Davis, Inc., Los Angeles and San Francisco, and by 160 other distributors from coast to coast.

(Continued from Page 84)

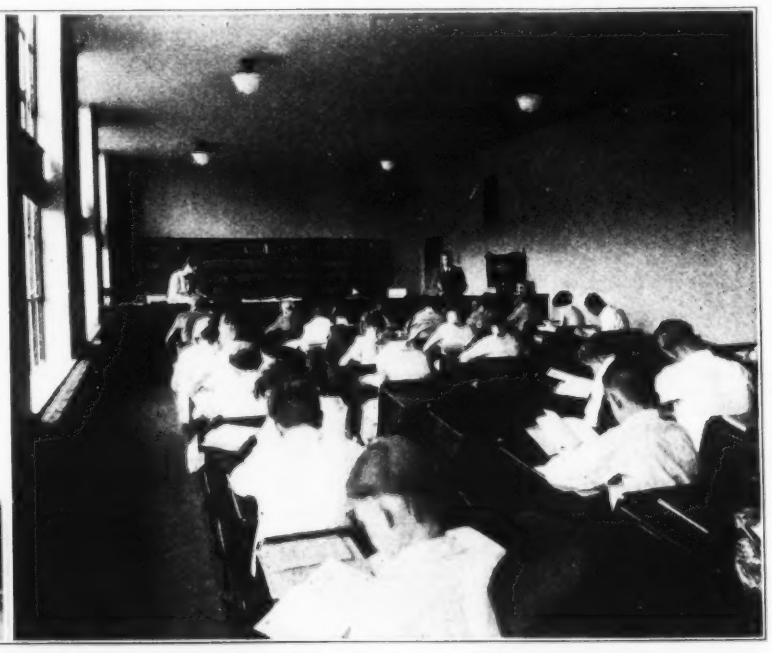
—The latest report of the superintendent of school buildings of New York City, shows that 59 school-building projects are now under construction. This is the largest number of sittings under construction since May, 1925, when 90,290 were under contract. The building bureau has plans in preparation for 28 additional projects, with a total of 39,674 sittings.

Of the new schools planned, 23 are elementary schools, with 2,002 sittings, and five are high and special schools, with 14,652 sittings. In this group

(Continued on Page 88)



EXTERIOR VIEW LOOKING NORTHWEST



LIBRARY AND STUDY HALL

A COMPLETE COMMUNITY HIGH SCHOOL: HIGH SCHOOL, PARK CITY, UTAH

Park City, Utah, is enjoying the benefits of a new high-school building completed in the fall of 1928 and providing the community with a very complete, modern plant suited to meet the educational needs of the community.

The building is designed on the unit plan with careful consideration of the expansion of department and the enlargement of the building as a whole.

The building contains an auditorium seating 700 persons and adapted both to school and community needs. The room is fitted with opera chairs, and contains a fireproof motion-picture booth. The stage has adjoining it separate dressing rooms for boys and girls, a complete lighting unit, and provisions for the latest type of stage fittings.

The science department is fitted with cases and instruction desks to serve for chemistry, physics, biology and physiology. In an emergency the room may even be converted into a classroom. Each desk, including the instructor's table, is furnished with gas, water, and drainage. All piping was laid in the concrete floors and is of a type that will insure long wear and freedom from plumbing troubles. Gas for the laboratory is furnished by an automatic machine of the latest design. Fume hoods and cupboards have been especially designed and built in.

The gymnasium measures 60 by 90 ft., and is flanked with the usual necessities for the complete use of the room during school periods and after hours.

The classrooms are fitted with steel window sash, built-in steel locker for the teacher, blackboards with cork display panels, automatic temperature regulation, unit ventilators, and a bookcase.

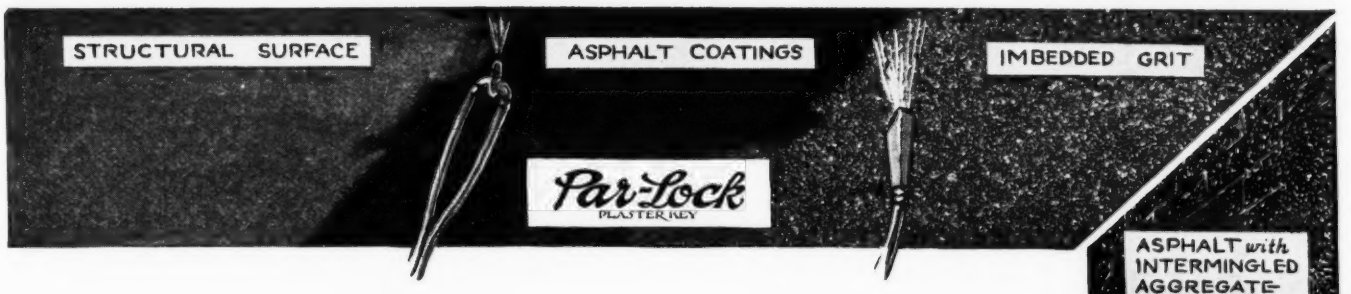
The general study room, illustrated in the accompanying illustration, has an integral part, the school library. The librarian, who also acts as study supervisor, is in charge of a library that will be increased as the school grows and as funds become available for the purchase of books. It is planned to spend $500 per annum for books and periodicals.

The offices of the superintendent of schools, of the board of education, and of the high-school principal are located in the building. The administrative rooms include a fireproof vault and ample storage space.

The heating plant provides heat for an adjoining elementary school. The boilers are fitted with automatic stokers, and there is complete temperature control for the central fans, as well as the direct classroom radiation.

The building adjoins a municipal playground and ball park operated by a city recreation board. This board includes representatives of the city government and the board of education, and is open for general use by the public, as well as use by the school.

The building, including the site, furnishings, etc., cost $200,000. The building is constructed of brick and concrete and is fireproof throughout. The entire plant is a real civic center. It is presided over by Mr. Howard V. Alston, superintendent of the city schools.



3 FACTORS

THREE factors determine the satisfactory character of a pre-plastering treatment. 1. Material; 2. Application; 3. Supervision.

Par-Lock and Dens-tect employ specially blended asphalts, developed as the result of many years experience and a knowledge of the successes and failures of every type of material—and distributed only through Par-Lock Appliers.

They are applied with specially designed equipment (not ordinary spraying devices) in the hands of trained crews, employed only in Par-Lock work.

The final assurance of excellence is in the Par-Lock applying organization, a responsible licensee the cornerstone of whose business is the prestige and good repute of the Par-Lock name. Their trained engineers supervise every stage of the work.

Par-Lock Appliers

ALBANY,
425 Orange Street
ATLANTA
Bona Allen Building
BALTIMORE,
613 West Cross Street
BUFFALO,
958 Ellicott Square Bldg.
CHICAGO,
111 West Monroe Street
CINCINNATI, OHIO
611 Dixie Terminal Bldg.
CLEVELAND,
218 Hunkin-Conkey Bldg.
COLUMBUS,
751 South Cassingham Rd.
DETROIT,
2457 First National Bldg.
KANSAS CITY, MO.
2035 East 19th Street
MINNEAPOLIS,
434 Builders Exchange
NEWARK, N. J.
24 Commerce Street
NEW YORK CITY,
50 Church Street
PHILADELPHIA,
1700 Walnut Street
PITTSBURGH,
207 Fulton Building
SCRANTON, PENNA.
Cedar Avenue
ST. LOUIS
1514 Chemical Building
TORONTO,
2258a Bloor Street, West
TRENTON,
339 Broad St. Bank Bldg.
YOUNGSTOWN,
503 City Bank Building
WILKES-BARRE, PA.
904 Second Nat'l Bank Building

Par-Lock
PLASTER KEY

with gun-applied grit securely embedded in multiple coatings of asphalt—applied at normal temperatures—assures both protection and key for ceilings plastered direct, as well as for a variety of wall applications.

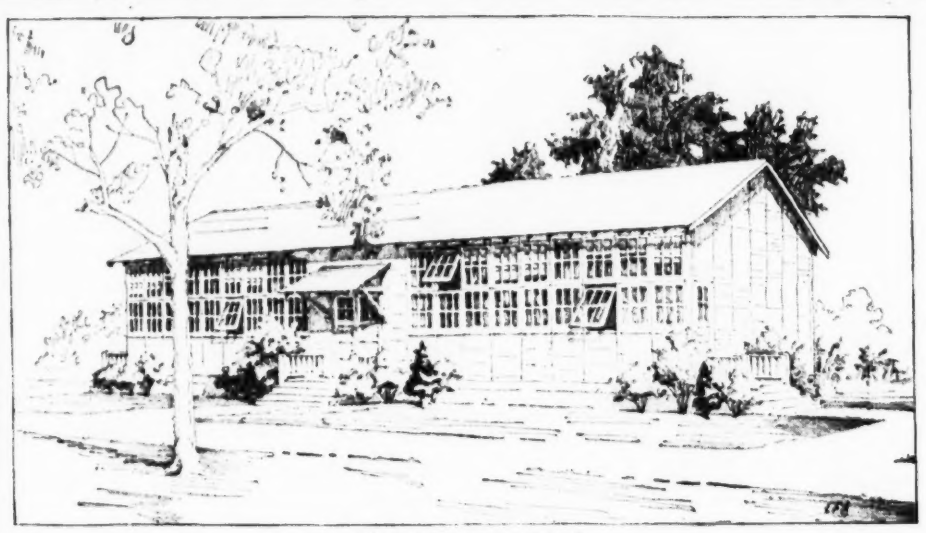
Dens-tect is a superior treatment for the interior surfaces of exterior walls. By a specially constructed nozzle, a fine aggregate is mixed with the asphalt at the nozzle and the application built out to tangible thickness—securely filling all the small voids in the structural surface.

Address "Par-Lock Appliers" at the nearest location listed and rely fully upon the counsel and service rendered.

THE VORTEX MANUFACTURING COMPANY
1987 West 77th Street . . . . Cleveland, Ohio

FOR SUCCESSFUL PERFORMANCE · A.G.C-A.E.

PRE-PLASTERING TREATMENTS



Typical Two-Room School

Stronger, Airier, *Insulated* Buildings for Every School Housing Need

Circle A Schools and Gymnasiums provide attractive quarters for any size of student body—*at a reasonable cost and in a very short time.* For instance: 4 men erect the one-room school in five days. Other buildings "go up" correspondingly as fast. ¶ Circle A walls are insulated—four layers thick. They keep out heat, cold, and noise. ¶ Circle A Buildings are reinforced at every three feet and at all four corners. They are truly more rigid than most frame buildings. ¶ And, last but very important—Circle A Buildings are handsome substantial structures that can stand with pride in the most expensive company. Send for interesting details. No obligation.

Typical Gymnasium

CIRCLE A PRODUCTS CORP.
600 S. 25th St., Newcastle, Ind.

CIRCLE A BUILDINGS
· · · Portable · · ·

(Continued from Page 86)

are included the Brooklyn Technical High School and the Grover Cleveland High School.

—Hopkinsville, Ky. The school board recently completed an addition to the high-school building. A gymnasium and cafeteria will be erected at a later date.

—The newly completed junior high school at South Milwaukee, Wis., was dedicated in October with a suitable dedicatory program. The building, which contains seventeen classrooms and a gymnasium, was completed at a cost of $305,000. The school has an enrollment of 365 students.

—Chilton, Wis. The voters recently approved a bond issue of $147,000 for a new school.

—Everett, Wash. A school-building program, approximating a sum of $100,000 for the school year 1930, has been authorized by the board of education. Mr. E. W. Morrison, a Seattle architect, has been employed to prepare plans for the extension and improvement of the South Junior High School. The money for the improvements will be raised by a five-mill levy at an election to be held in December.

—Pontiac, Mich. Four new schools, including two junior high schools and two elementary schools, were occupied with the opening of schools in September. In addition, a gymnasium and an industrial-arts wing were added to the senior high school.

The rapid increase in the enrollment of the Pontiac schools is indicated by the fact that 1,400 more pupils were enrolled in the opening week of the schools this year than were enrolled at the same time last year. The increase represents a gain of 13.5 per cent over the past year.

—Mr. Samuel A. Challman, director of school buildings for the state education department of Minnesota, has estimated that the cost of new school-building projects for the year will exceed $4,000,000. The amount is greatly in excess of the amount expended for the purpose in 1927 or 1926. A total of 37 school buildings have been completed, or are in process of completion, and 48 one- and two-room schools have been completed.

—Mitchells, Va. The voters of the school district recently approved a bond issue of $20,000 for a school building. Plans for the building have been approved by the state school architect and construction work will begin at once.

—The school board at Carrollton, Ky., during the past summer completed a program of improvements to the school buildings and grounds. The windows of the school plant were equipped with metal weather stripping and an ash hoist was installed in the basement. The four acres of ground surrounding the school building was laid out and planted under the direction of an experienced landscape artist. The grounds present a fine appearance and have been rated as one of the most beautiful in northern Kentucky.

—A new high school, to cost $500,000, is nearing completion at Owosso, Mich. In addition to thirteen classrooms, the building will contain an auditorium, a library, a lunchroom, two study halls, and manual arts and domestic science departments. The building was erected from plans prepared by Mr. William B. Ittner, architect, of St. Louis, Mo., and will be ready for use in December, 1929.

—Vandalia, Ill. The board of education completed some extended improvement to the high-school building during the past year. The old building was remodeled and an addition, consisting of an auditorium and a gymnasium, was erected. The high school has an enrollment of 275, which is an increase of thirty students over last year.

—Hartford City, Ind. During the past year a new twelve-room grade building was erected, at a total cost of $114,000. The building contains an auditorium, offices, and restrooms, in addition to twelve classrooms.

—Mobile, Ala. The citizens have voted a bond issue of $300,000 for new schools.

—Principals in the schools of Los Angeles, Calif., have been urged to exercise great care in matters pertaining to motion pictures and motion-picture projectors. All principals have been urged to see that every precaution is taken to prevent loss of life and property through fire. Only such teachers as have received instruction from the visual education division may be permitted to handle motion-picture films and projectors. Attention is called to the school-board rules governing the use of motion-picture films.

—Chicago, Ill. Under the direction of Mr. Paul Gerhardt, architect of the board of education, Saturday afternoon classes in the manufacture of building materials have been established for building superintendents and construction men engaged in schoolwork.

Each Saturday afternoon, the men will visit some building-material plant, to study the method and manner of manufacture of building materials, from the raw material through to the finished product.

The first trip was made to the Chicago plant of the Northwestern Terra Cotta Company. This will be followed by trips to other building-material plants. Personal contact will be made between the superintendents of the school board and the manufacturer's engineers. The leading manufacturers of building materials in the city are cooperating with the school officials in the operation of the plan.

—Milwaukee, Wis. It is anticipated that the school-building program of the board of school directors will be greatly revised as the result of a cut of $670,000 in appropriations caused by taxation changes at the hands of the state legislature. The five-year school-building program originally called for an expenditure of $2,000,000 per annum.

Changes in the tax law have also caused a loss of operating funds for the schools, about $120,000 to the school fund, $20,000 to the repair fund, $12,000 to the trade-school fund, and $8,000 to the school extension fund.

(Concluded on Page 90)

THE SCHOOL PRIESTESS

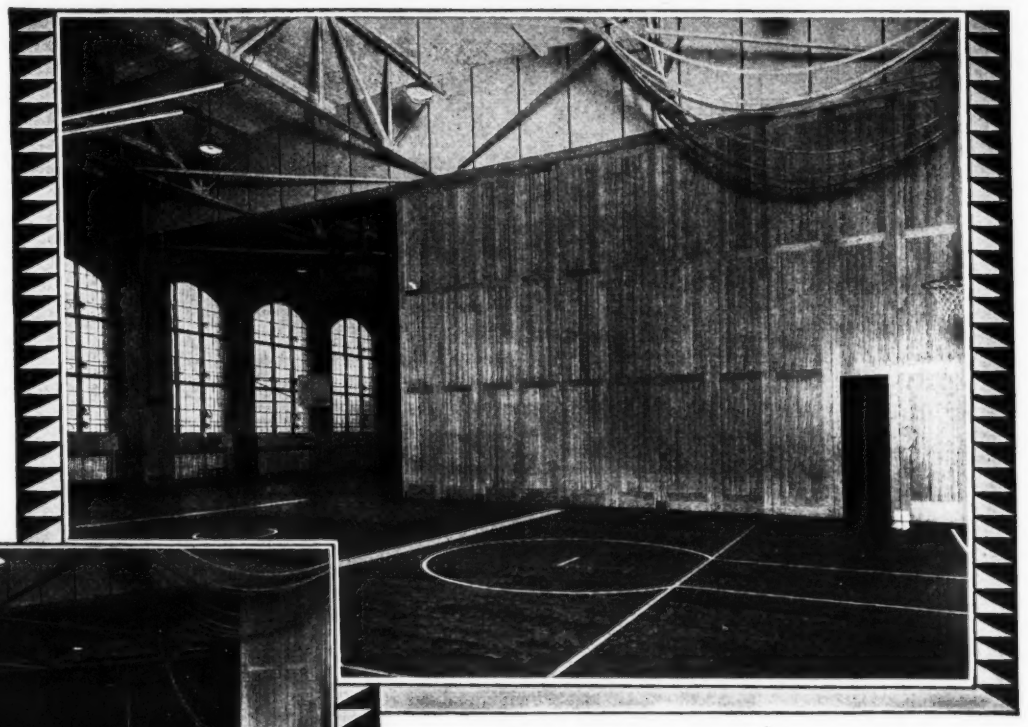
She gives a little gilt star for good work—a golden star for supreme sacrifice. It was, however, a question whether the eyes shone brighter or the smile was more winning, or the laugh merrier over the record of some new honor to a former pupil, or over the arrival of a new group of beginners. The heart of the Priestess was that of a true Pioneer. Her face was ever toward the future. And perhaps her greatest joy was from the fresh, unsullied page of a pupil's life upon which she was to be privileged to place her watermark, so that, whenever the light shone through, it might be seen.

George William Gerwig,
Pittsburgh, Pennsylvania

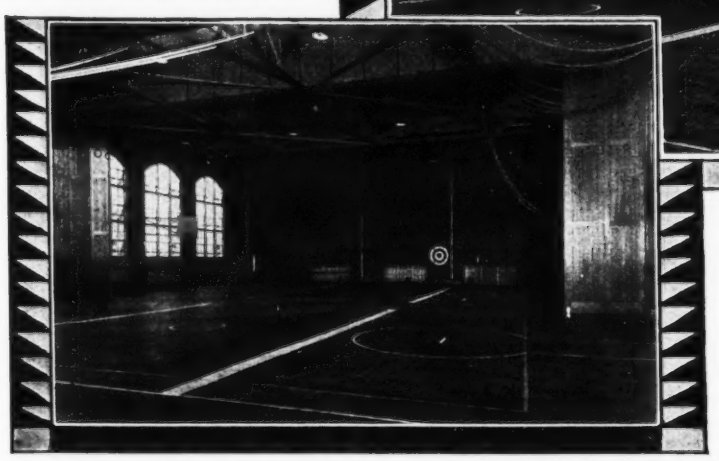
Wilson

SECTIONFOLD PARTITIONS

(REG. U. S. PAT. OFF)



Western High School, Baltimore, Md. Col. Henry G. Perring, Superv. Eng. Pub. Improvement Comm. Jas. Evans Sperry, Archt.



SECTIONFOLDS being moved back to open up entire floor space. Note, at left, how little space is required for SECTIONFOLDS, even when wall pockets are not installed.

WILSON SECTIONFOLD PARTITIONS in "Gym", showing partial sub-division.

TWO "GYMS" OR ONE . . . Increase Facilities the Modern Way

WILSON SECTIONFOLD PARTITIONS divide off Gym at will—all separate rooms for handball, squash, individual exercises and wrestling—without interference from indoor baseball or basketball.

For big games, all partitions fold quickly out of the way, allowing use of entire floor space for players and spectators, instead of space being "cramped" by permanent walls of small rooms. Therefore, more efficient as well as more economical than permanent walls.

Doors are usually 3 inches thick, with flush surfaces, both sides, avoiding deflection of basketballs, handballs, etc., and preventing injury to players thrown or falling against partitions.

SECTIONFOLD PARTITIONS are also used to sub-divide auditoriums. In new construction, the modern way is to use SECTIONFOLDS for classroom walls. At will, all classrooms may be converted into one large room, avoiding expense of separate Assembly Room.

Made by pioneers in the field. When you specify Wilson Sectionfolds you run no risk of dissatisfaction such as might occur in the case of products which have not been tested and proven during long years of use.

Full details and illustrations showing how SECTIONFOLDS increase gymnasium and classroom facilities of modern schools are shown in our catalog.

Other Outstanding Advantages

1. Adapted to old buildings as well as those under construction.
2. Small doors in partitions give easy access to all rooms.
3. Panelled differently on both sides if desired, to harmonize with surroundings.
4. Perfect operation because of our own installation and service offices in principal cities.
5. Woodwork and hardware all products of our own factory, and all of best quality obtainable.
6. Five year guarantee with each installation.

Send for Catalog No. 14

THE J. G. WILSON CORPORATION

11 East 38th Street New York City

Offices in all Principal Cities

Also Manufacturers of Rolling Partitions and School Wardrobes.
Catalogs on request.

OVER FIFTY YEARS IN BUSINESS

Will it *Stay* Closed?

"Yes!" If it's a *Miller* Wardrobe

For the Miller wardrobe works under the multiple operation . . . single control system. The master door operates all the other doors.

Wardrobe doors open out into the schoolroom and therefore the teacher or monitor who manages storage and reclaiming of wraps cannot fail to notice that the doors are standing open.

As a result the Miller Wardrobe is always closed . . . locked . . . secure against petty pilfering . . . and an active means of obtaining perfect ventilation for the classroom. The Miller Wardrobe can be obtained with or without blackboard equipment. Just write for catalog W-7 which explains the Miller Wardrobe in detail. We can fill your needs in either new or old buildings. Write for further information.

119-123 West 8th St. **K-M SUPPLY CO.** KANSAS CITY, MO.

(Concluded from Page 88)

—Lemoyne, Pa. The voters have recently approved a school-bond issue of $85,000 for improvements to the school buildings.

—The school board of Toledo, Ohio, is cooperating with the Waite high-school alumni association in the preliminary plans for the construction of a stadium on the athletic field of the high school. It is planned to conduct a campaign for the raising of a fund to finance the construction work.

—Bridgeville, Del. The voters have approved a school-bond issue of $26,625 for the erection of a twenty-room school building. The proceeds of the bond issue will be added to a special appropriation of $180,000 set aside by the state board of education. A building committee of four members has been appointed to work with the architects in the preparation of plans for the building.

—Mr. John Glaettli, Jr., of Madison, Wis., has been appointed as supervising engineer of construction on the new West High School building. Mr. Glaettli will act as assistant to the superintendent of school grounds.

—Granite City, Ill. During the past twelve months, the school board completed the erection of two school buildings—one a four-room building, and the other a twelve-room building, with auditorium and gymnasium. The two buildings were completed at a cost of $235,000.

—West Allis, Wis. The school board has requested an appropriation of $752,952 for school purposes during the year 1930, in addition to a bond issue of $268,000 for two new schools and an addition.

—Mt. Vernon, N. Y. The school board has adopted a gross budget of $2,318,512 for the school year 1930. Of the total amount, $1,866,900 must be raised by taxation. The largest item in the budget is $945,922 for salaries of teachers, principals, and clerks. The largest increase for a single item is $104,665, which represents the money cost for bond retirement, interest, and insurance.

—The school board of Prince Georges county, Md., has decided not to offer $207,000 in school bonds for sale until next January. The sale was delayed awaiting a better premium and a more favorable bond market.

—Maywood, Ill. The grammar-school board of Dist. No. 89 has agreed upon a tax appropriation of $560,000 for the year 1929–30.

—A suit has been begun in the chancery court of Arkansas, by the school board of Jonesboro, Ark., to recover $1,173 from the county general fund for the school fund and to restrain further diversion of school funds into the general fund. The suit contests the validity of the state law of 1915, which places officers of the county on salary, and requires that funds in excess of their salaries, be paid into the county general fund.

—Indianapolis, Ind. Complying with a recent request of the state tax board, the school board has adopted a resolution fixing individual costs for the Irvington High School, two grade schools, and two additions to grade schools. The tax board had criticized the school board for not stipulating how much was to be expended for each of the school-building projects. The total amount of the proposed bond issue for these buildings is $1,215,000.

—Long Beach, Calif. The school board has adopted a school-building program calling for an expenditure of $200,000.

—Minneapolis, Minn. Mr. A. E. MacQuarrie, principal of the Washburn High School, in a recent letter to the bureau of buildings of the board of education, criticized the bureau for not consulting the principals regarding the educational facilities of their buildings.

Mr. MacQuarrie suggested that the board of education obtain the constructive criticism of the principals in charge of the thirteen junior and senior high-school buildings before proceeding with plans for the new Washburn million-dollar high school.

—Buffalo, N. Y. The board of education has approved a school-building program, calling for an expenditure of $3,241,119 for the school year 1929–30. The major unit in the program will be a high school for the Kensington district, which will cost $1,700,000.

—Youngstown, Ohio. The school system faces a shortage of $100,000 due to delinquent taxes. The school board has $998,872 to meet expenses estimated at $100,000 more than that amount. Of this amount, payrolls of $837,005 must be met, also $157,598 contracted for in the building fund. In addition, there are expenditures for supplies included in the budget, for bonds and interest, fixed charges, and new building sites. Even with the approval of the 1.5 mill levy, it is anticipated that there will be a shortage of fully $70,000 in the budget.

—Macon, Ga. The school board has completed the erection of a thirteen-room grammar school at a cost of $105,000, and an addition to the Lanier High School at a cost of $40,000. Plans have been completed for a senior high school for girls, to be erected at a cost of $150,000.

—The county board of education of Gulf county, Fla., has expended more than $2,000 for repairs to the Wewahitchka High School during the past two months. New toilet facilities were installed and all woodwork was repainted.

—A new colored school was recently completed at Port Joe, in Gulf county, Fla. This was a Rosenwald School, and part of the building cost was shared by the state through the Rosenwald Fund.

—Milwaukee, Wis. In his annual report to the school board, President Stephen A. Park reviewed the work of the past year and presented recommendations for the coming year. Mr. Park pointed out that, in spite of building operations which have kept pace with the board's building program, the problem of adequately housing the school children has challenged the most careful and earnest consideration of the board members. Three principal factors appear to enter into the situation, namely, the inadequate facilities of newly annexed territory, the gradual movement of the population to the suburbs, and the demand for additional accommodations in the older sections of the city.

The overcrowded conditions are principally in the high schools, 447 sittings still being needed to relieve assembly halls, and 2,000 to relieve crowded classrooms. The total shortage of sittings in the schools at present is 7,418, or only 365 less than the shortage of one year ago. A total of five elementary schools and one high school have been added to the school system through annexation, and the problem of bringing these up to the standard will prove costly.

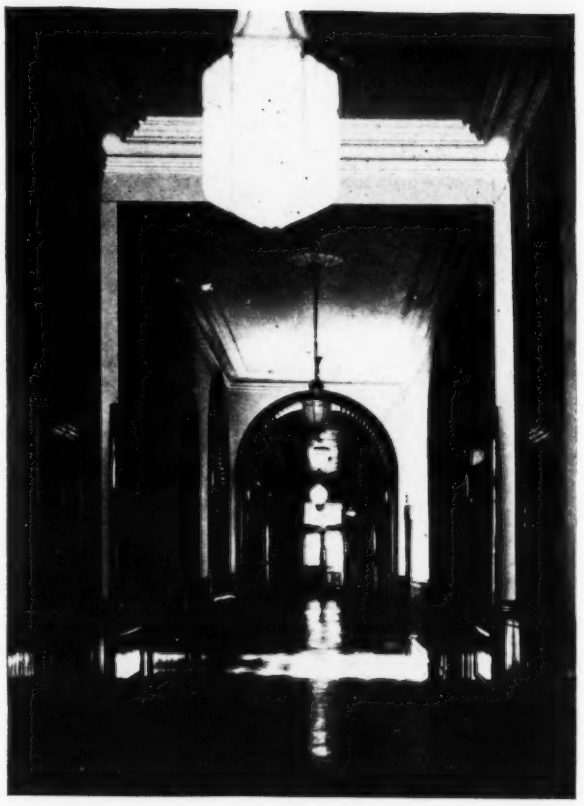
—Cleveland, Ohio. The school board has approved a building program providing for the erection of two junior-senior high schools and five additions to existing buildings. The construction work will be completed at a cost of approximately $3,000,000.

—Douglas, Ga. The school board has recently completed the refinishing of the library. New cabinets were installed and approximately $400 was raised for the purchase of additional books. The general laboratory has been moved to larger and more suitable rooms in the school building. A new stage curtain and stage scenery has been installed in the school auditorium.

CAR-NA-VAR

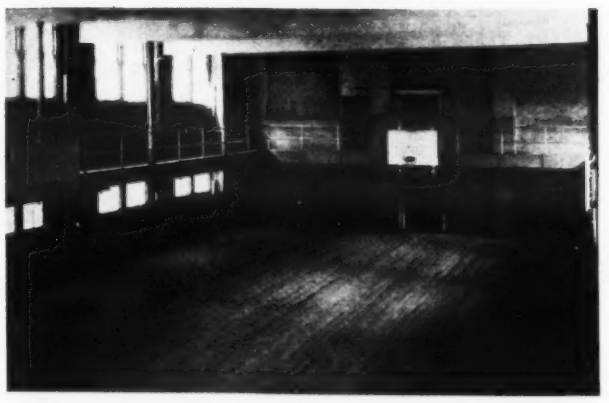
TRADE MARK REG. U.S. PAT. OFF.

THE PERFECT FLOOR TREATMENT



Main Corridor, St. Francis Xavier College

Easily applied with a mop.



Gymnasium Floor
St. Francis Xavier College
New York City, N. Y.

Shipped in containers convenient to use.

For floor surfaces subjected to continuous hard usage CAR-NA-VAR will protect at a minimum yearly cost.

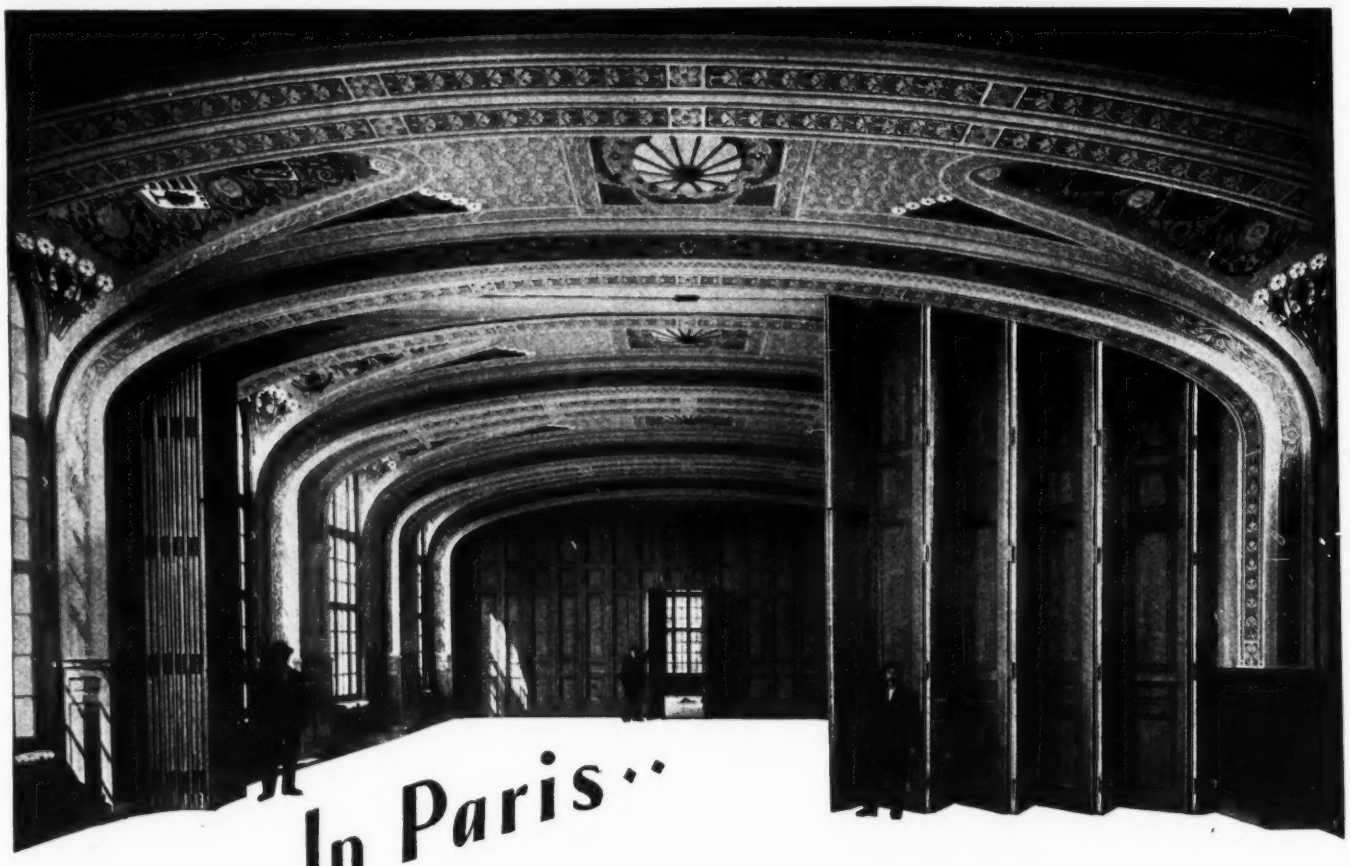
CAR-NA-VAR is a COMBINATION of varnish and wax into ONE TREATMENT applied with a mop. It dries in less than one hour and quickly responds to a brilliant varnish-like polish. Your floors may be CAR-NA-VARED tonight and be ready for morning use.

Write for full details and price quotations.

Continental Chemical Corporation

Watseka 219 Scott Street Illinois

SERVICE BRANCHES AND WAREHOUSE STOCKS IN PRINCIPAL CITIES



In Paris ..
..Superb FOLDER-WAY Partition door installation!

THE whole world turns to R-W for solving intricate doorway problems. Here's an example—

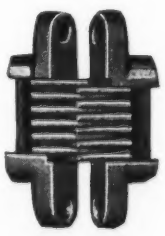
Monsieur Gueritte, architect of the Cite Universitaire, Fondation Belge, Paris, France, designed a series of high-ceilinged rooms to be used individually or to be readily converted into one long spacious hall. Openings fifty-five feet wide, twenty feet high, plus the need for elegance of appearance and silent, easy operation, presented an unusual problem.

R-W FoldeR-Way partition door equipment filled every requirement. Nine doors fold and slide to either side of each opening, quietly, smoothly, quickly and with a minimum of effort. A service door in the center of each sound-proof partition gives ready access from room to room.

FoldeR-Way installations, assuring continuous satisfactory R-W performance, are common all over the World.

There is nothing like R-W equipment and R-W Service. Write for Catalog No. 43.

R-W Compound Key Veneered Partition Doors withstand dampness, changes of temperature and continuous hard use. Laminated stile and rail core construction with heavy sawed tongue and groove veneer, insures lasting beauty. Sold exclusively by R-W with FoldeR-Way Hardware.



Brass finish invisible hinge for partition doors.

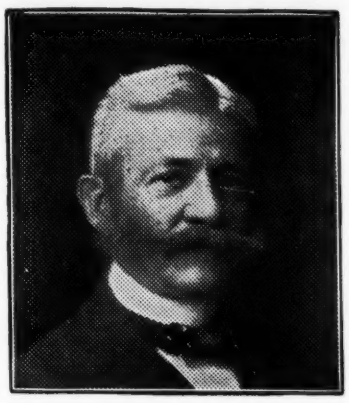
Richards-Wilcox Mfg. Co.

A Hanger for any Door that Slides

New York . . . . AURORA, ILLINOIS, U.S.A. . . . . Chicago

Boston Philadelphia Cleveland Cincinnati Indianapolis St. Louis New Orleans Des Moines Minneapolis Kansas City Atlanta Los Angeles San Francisco Omaha Seattle Detroit

Montreal • RICHARDS-WILCOX CANADIAN CO., LTD., LONDON, ONT. • Winnipeg



Give Text Books the Protection and Support of the

HOLDEN BOOK COVERS

and they will give your community

Twice as Much Service

This automatically reduces the annual outlay for new books and provides the necessary Sanitary features so important wherever Free Text Books are furnished.

Adjustability — Wearing Quality — Hygiene

Samples Free

THE HOLDEN PATENT BOOK COVER CO.

Miles C. Holden, President **Springfield, Massachusetts**

FIRE HAZARDS REDUCED IN SAN FRANCISCO SCHOOLS

C. W. Geiger

A program of improvements which seeks to further reduce fire hazards in San Francisco public schools is being carried out this year, according to Mr. David P. Hardy, deputy superintendent of schools in charge of school-construction work.

Three hundred and fifty fire extinguishers are being installed in the several school buildings and a junior fire-prevention brigade has been formed among the students. In addition, all boiler rooms have been safeguarded against fire through the removal of inflammable objects, such as wooden stairs and doors. The walls of all boiler rooms have been lined with sheet metal

With the exception of the newer buildings, the public schools were formerly equipped only with fire hoses, but to doubly protect the children from possible fire hazards, the fire department prevention bureau has recommended the use of fire extinguishers.

The extinguishers will be placed in bright-red boxes, which will be easily found in case of fire. Teachers have been instructed not to use the extinguishers, but in case of a fire, they must lead the pupils from the buildings, and leave the use of the extinguishers to the fire department upon its arrival. Instructions to janitors provide that their duty in case of fire is to rush to the nearest alarm box and call the fire department.

The student fire brigade will consist of a student captain, a lieutenant, and eight hosemen in each school. They will inspect the building for fire hazards, and at assemblages in the school auditorium, will make preparations for vacating the auditorium speedily if a fire breaks out.

Principals have been given instructions that whenever a battalion chief of the fire department calls to stage a fire drill, the drill must be staged immediately, even though the principal, teachers, or students are engaged in some important task.

NATION-WIDE SCHOOL SURVEYS

As a result of a conference on the subject of education called by Secretary Wilbur of the Department of the Interior last June, three committees have been appointed to engage in a survey and to report their findings. The three committees are headed by Charles R. Mann, director of the American Council of Education. J. W. Crabtree of the National Education Association will serve as general secretary.

The committee that will consider the educational activities of the United States Government, their present administration, and what shall be the future organization, includes:

James E. Russell, President American Adult Association, Sub-Chairman.
S. C. Capen, Chancellor University of Buffalo.
W. M. Davison, Superintendent of Schools, Pittsburgh.
Frank P. Graves, Commissioner of Education, Albany.

THANKSGIVING TIME IS WHEN YOU FIRST DISCOVER THAT JUNIOR IS GROWING UP
—Chicago Tribune

J. C. Merriam, President Carnegie Institution, Washington.
W. E. Willoughby, Washington.
W. S. Thayer, Johns Hopkins University, Baltimore.
Lois H. Meek, Washington.
Lita Bane, University of Wisconsin.
George D. Strayer, Columbia University.
Miss Belle Sherwin, Washington.
Walton L. Crocker, Washington.
The Rev. George Johnson, Washington.
Mrs. F. P. Bagley, Boston.

The committee that will study subsidies of the Federal Government to colleges, their administration, the results obtained, and future policies, comprises:

Lotus D. Coffman, President University of Minnesota, Sub-Chairman.
James R. Angell, President Yale University.
Henry W. Chase, President University of North Carolina.
George H. Denny, President University of Alabama.
Edward C. Elliott, President Purdue University.
Uel W. Lamkin, President National Education Association.
Cloyd H. Marvin, President George Washington University.
The Right Rev. Edward A. Pace, Vice-Chancellor of College.
W. P. Morgan, Western Illinois State Teachers
Catholic University of America.
D. W. Springer, Washington.
Mary E. Woolley, President Mount Holyoke College.
George F. Zook, President University of Akron.
Miss Lida Lee Towl, Teachers College, Townson, Md.
Dr. E. P. Cubberly, Stanford University.

A third committee will study subsidies granted for education of less than college grade, how administered, results obtained, and suggestions of future policy. It will include:

Frank Cody, President Department of Superintendence, National Educational Association, Sub-Chairman.
J. B. Edmonson, President National Committee of Research in Secondary Education.
Charles H. Judd, University of Chicago.
Mrs. S. H. H. Marrs, President National Congress of Parents and Teachers.
A. B. Meredith, Commission of Education, Connecticut.
Carl H. Milam, Secretary American Library Association.
W. B. Munroe, Harvard University.
W. F. Russell, Columbia University.
Guy E. Snaveley.
William Green, President American Federation of Labor.
T. E. Finegan, Rochester.
Mrs. L. W. Hughes, Arlington, Tenn.
Mrs. Edith B. Joynes, Norfolk, Va.
Miss Agnes M. Samuelson, Iowa State Superintendent of Public Instruction.
R. L. Cooley, Milwaukee.
Maurice Bisgyer, Washington.

High Interest Rates for School Bonds Continue

Index of School Bond Prices[1]

Harold F. Clark, Teachers College, Columbia University, New York, New York

The net interest rate on all school bonds sold in the month of August was 5 per cent. This is .01 of 1 per cent higher than the corresponding rate for August; it is identical with the rate for July. As is evident from the figures, bond interest rates have reached a very high level and have been remarkably stable for the past four months. This is certainly not good news for the school board that must sell bonds. The best financial opinion in New York is not expecting better prices in the immediate future.

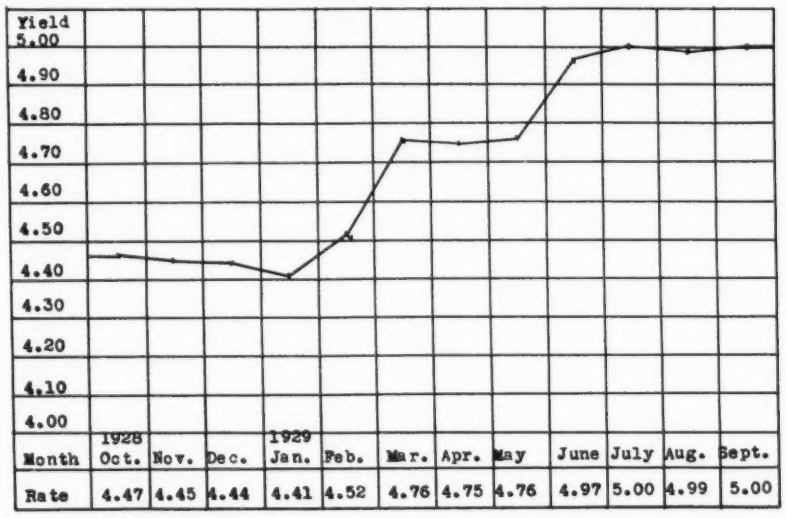


TABLE I. AVERAGE YIELD OF ALL SCHOOL BONDS SOLD DURING THE MONTH

One of the most important statistical organizations in the country in its last publication states that bonds have reached the highest interest rate in several years, but it goes on to state that one interested in buying bonds should be in no hurry because bond prices may go even lower. Lower prices, of course, means that the issuing body must pay higher interest rates. A recent headline in a financial section of an important daily says, "Bonds continue decline, lowest in four years." If a school board must sell bonds in the next few months, there may be no great gain in postponing the situation. Of course, as has been stated so many times, the trend of the bond market depends very largely upon the amount of money that is diverted to stock speculation. This will probably be the best single indication of bond prices within the next few months. Any school board which must sell bonds would do well to watch the total loans for speculative purposes. At the end of September, brokers' loans had reached a new high figure. The increase of $667,000,000 in September carried the total loans to well over $8,000,000,000; some slight decrease was registered the early part of October. But unless there is a drastic reduction, it is very difficult to see how bond prices can improve very much.

[1]Copyright by Harold F. Clark.

When 8 and 10 per cent can be readily obtained for call loans, people are not enthusiastic about buying 4½-per-cent bonds.

Some cities are going on with short-term financing. This is indicated by the following quotation: "An offering of $50,000,000 City of New York short-term notes, comprising nine separate issues, in the form of revenue bills, special tax notes, special revenue notes, and corporate stock, will be made today. This financing is done in lieu of long-term bond offerings." Several cities had difficulty in selling bonds in recent weeks. The Bond Buyer has an interesting comment on the situation which developed in St. Louis:

"The St. Louis purchase, which followed the unsuccessful formal offering last week, was an interesting operation and illustrates one way a par sale requirement may be overcome. The $6,000,000 issue as offered was not worth a par bid. Even with the shorter bonds eliminated there was still not quite enough margin to the retail prices (a 4.40 per cent basis) to justify a banking group undertaking the task of distributing the bonds. The sale was finally made on the basis of an arrangement whereby the city sinking fund bought from the banks the $2,058,000 shortest bonds at a premium of about $23,000, thus writing down the cost of the remaining $4,000,000 bonds to slightly less than par."

This, of course, is a very awkward procedure and the par requirement should be abolished in every state. At least the city was financially able to sell the bonds. San Francisco is reported to have had great difficulty with some of its recent bonds. The press notice in regard to the attempted bond sale in Montgomery, Alabama, is typical of many others: "All bids have been rejected by the City of Montgomery on its issue of $500,000 five-per-cent refunding bonds. The highest bid was 95.51."

The total school-bond sales in September were slightly less than $12,000,000. This represents a slight decrease from the previous month. As Table II shows, all municipal securities sold

(Concluded on Page 96)

TABLE II
Amounts and Yields of Bond Issues[2]

1. School bonds sold during the month of August	$ 12,234,865
2. All municipal securities sold during year (to date)	925,113,511
3. All school bonds outstanding (estimated)	3,261,000,000
4. Average yield of all school bonds outstanding (estimated)	4.63%
5. Yield of school bonds of ten large cities	4.61%
6. Yield of United States long-term bonds (quotation the middle of January)	3.69%

[2]The monthly total of school bonds does not include all the bonds issued in the month, due to the difficulty of obtaining the yield on some of the issues.

TABLE III
Bond Sales and Rates[3]

Year	Bond Sales: School	Bond Sales: Municipal	Bond Sales: All Public and Private	Average Rates: Year	Average Rates: Municipal
1928	$240,000,000[4]	$1,413,000,000[4]	$ 8,000,000,000	1928	4.45
1927	266,000,000	1,509,000,000	7,735,000,000	1927	4.49
1926	260,000,000	1,365,000,000	6,311,000,000	1926	4.61
1925	323,000,000	1,399,000,000	6,223,000,000	1925	4.58
1924	288,000,000	1,398,000,000	5,593,000,000	1924	4.26
1923	206,000,000	1,063,000,000	4,303,000,000	1923	4.76
1922	237,000,000	1,101,000,000	4,313,000,000	1922	4.81
1921	215,000,000	1,208,000,000	3,576,000,000	1921	5.18
1920	130,000,000	683,000,000	3,634,000,000	1920	5.12
1919	103,000,000	691,000,000	3,588,000,000	1919	5.04
1918	41,000,000	296,000,000	14,368,000,000	1918	4.90
1917	60,000,000	451,000,000	9,984,000,000	1917	4.58
1916	70,000,000	457,000,000	5,032,000,000	1916	4.18
1915	81,000,000	498,000,000	5,275,000,000	1915	4.58
1914	42,000,000	320,000,000	2,400,000,000	1914	4.38

[3]By special permission, based upon sales reported by the Commercial and Financial Chronicle.
[4]Not final.

TABLE IV
Average Yield of Long-Term Federal Government Bonds[5]

Past Twelve Months: Month	Rate %	Past Six Years: Year	Rate %
1929		1928	3.437
Oct.	3.73[6]	1927	3.464
Sept.	3.74[6]	1926	3.544
Aug.	3.72	1925	3.797
July	3.67	1924	4.010
June	3.71	1923	4.298
May	3.67	1922	4.301
April	3.67		
Mar.	3.76		
Feb.	3.66		
Jan.	3.59		
1928			
Dec.	3.53		
Nov.	3.48		

[5]Taken from Federal Reserve Bulletin.
[6]Not final.

TABLE V
Security Prices and Yields[7]

Date	Average Price of 393 Stocks (1926 Average=100)	Average Price of 60 Bonds	Average Yield on 60 High-Grade Bonds
1929			
October	211.3[8]	94.9[8]	4.75[8]
September	225.5[8]	94.8[8]	4.76[8]
August	218.1	95.0	4.74
July	207.2	95.2	4.73
June	190.7	95.3	4.73
May	187.8	95.7	4.70
April	186.6	95.8	4.69
March	189.1	95.8	4.69[8]
February	186.5	96.3	4.65
January	185.2	97.0	4.60
1928			
December	171.4	97.2	4.59
November	171.1	97.8	4.55

[7]As reported by Standard Statistics Company, Inc. Used by special permission.
[8]Not final.

TABLE VI
Revised Index Numbers of Wholesale Prices[9]

Past Twelve Months: Month	All Commodities	Building Materials	Past Six Years: Year	All Commodities	Building Materials
1929					
Oct.	95.9[10]	96.4[10]	1928	97.7	93.7
Sept.	96.8[10]	96.5[10]	1927	95.4	93.3
Aug.	97.7	96.7	1926	100.0	100.0
July	98.0	96.7	1925	103.5	101.7
June	96.4	96.4	1924	98.1	102.3
May	95.8	96.8	1923	100.6	108.7
April	96.8	97.9			
Mar.	97.5	97.8			
Feb.	96.7	97.5			
Jan.	97.2	96.6			
1928					
Dec.	96.7	96.8			
Nov.	96.7	96.0			

[9]United States Bureau of Labor Statistics, 1926—100.
[10]Not final.

THE SINGLE-HANDED ORCHESTRA

—that played in 30 places at once

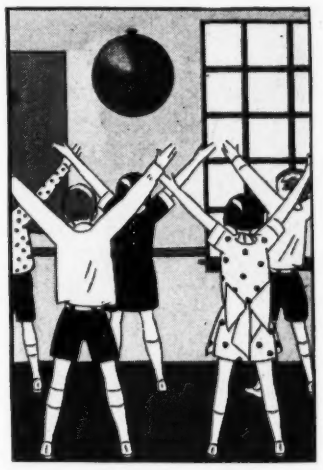
Its music is the rich, full-toned music of a great orchestra. Its volume is ample to fill the largest school auditorium or corridor. Yet the Western Electric Music Reproducer System costs but a few cents an hour to operate.

It is always ready—and plays any kind of music desired—any music recorded on ordinary phonograph records. Reproduction is clear and accurate.

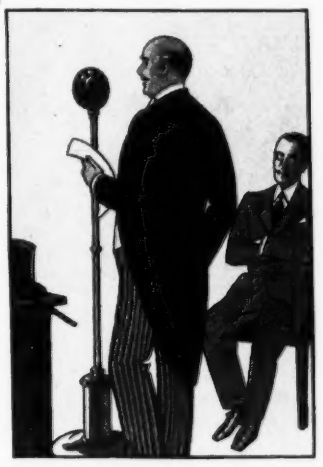
In conjunction with the Western Electric Public Address System its music may be distributed to one or as many rooms as desired. It may be used for marching, for exercises, or with radio pick-up, for music appreciation courses.

Principal's announcements may be put on the same system through a microphone—and directed to whatever rooms he chooses.

. . . And there are a hundred other uses. Manufactured by the makers of the nation's telephones, this system is electrically reliable. For full information, write the distributor, Graybar Electric Company, Graybar Building, New York, N. Y. Offices in 72 principal cities.



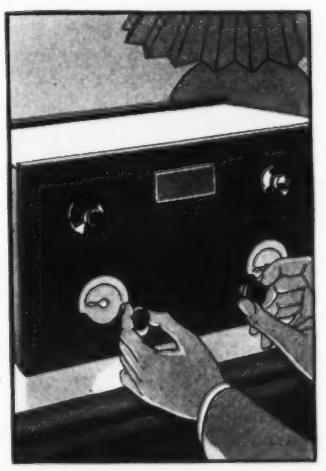
Exercises and folk dances are given new zest with music —via loudspeaker.



—and the distinguished visitor "visits" all rooms at once —thanks to the microphone.

The principal's voice may be heard in 15 (or 150) rooms at once.

—One school architect says "For fire use alone, it would more than justify itself."



Music appreciation courses—current events—any radio program can be heard by all.

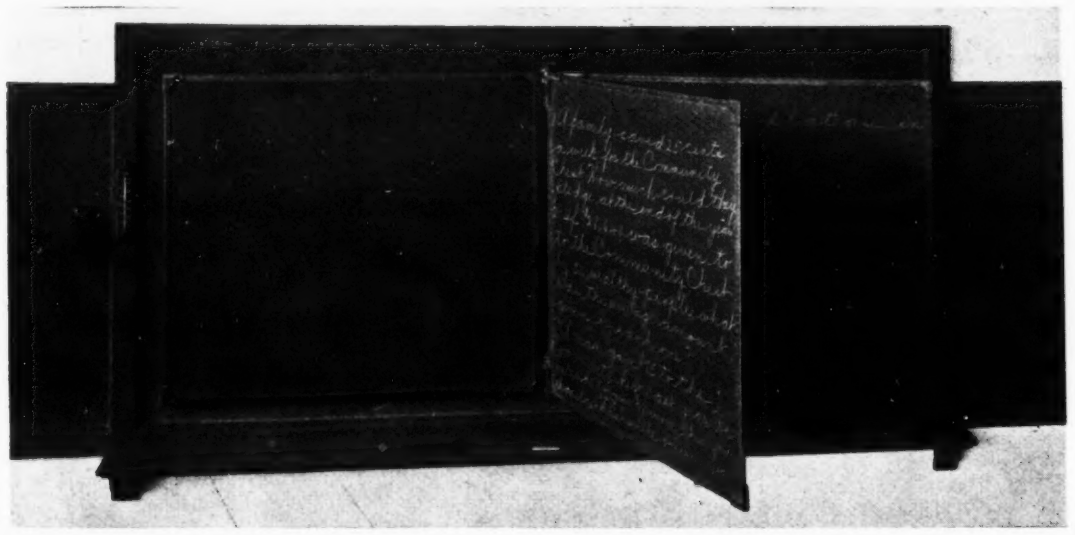
A child's voice can fill any auditorium when amplified as the System permits.

PUBLIC ADDRESS AND MUSIC REPRODUCTION SYSTEMS

Distributed by **GRAYBAR** *Electric Company*

Western Electric

The Alternator is Certainly Different!



And what an improvement! The old fashoned blackboard all round the schoolroom walls, is as out-of-date today as the horse and buggy. The most modern arrangement of the blackboard evuipment is to use the "Alternator" teacher's swinging blackboard, with green poster board at each side to relieve the children's eyes. This system will enable both teacher and students to do better work . . easier. Teacher sitting in the center of the room close to her Alternator can hold the attention of the pupils by placing lessons on the big swinging blackboard. She can "flash" the lessons by saving it on the Alternator. She can also preserve material from day to day. The Alternator resembles most a huge book of eight pages or leaves. Only genuine Bangor slate and the finest hardware are used. The Alternator can be installed in new or old buildings with equal convenience. Just write us your individual problems. Ask for Catalog No. A-4.

119-123 West 8th St. **K-M SUPPLY CO.** KANSAS CITY, MO.

(Concluded from Page 94)

to date are approximately $925,000,000. This is a substantial decrease from previous years. The first nine months of each year since 1924, total municipal-bond sales have been well over $1,000,000,000. As Table IV shows, there has been some slight tendency for the yield to increase on long-term Federal Government bonds.

As Table V shows, the price of stocks reached an all-time high in September. The average for the entire month being over 225. This compares with the price of September 1928 of 156. The sharp break in stock prices the first of October carried the average down several points, but still left it at a phenomenally high level. As one would expect, along with these very high prices for stocks we have had decided weakness in bond prices.

The wholesale price of all commodities is approaching a new low level for the year. According to some of the weekly indexes, the prices the first week of October were the lowest of the entire year. Table VI also shows that there has been some slight easing of the prices of building materials.

SCHOOL FINANCE AND TAXATION

SOLVING A SCHOOL DEFICIT

The Lafayette parish school board at Lafayette, La., had been running behind in its finances each year for a number of years. In 1928, the school indebtedness amounted to $91,750. Since the board could not legally vote bonds to pay the debt, how to continue the operation of the schools for the full nine months and pay off the debt became a serious problem.

Added to the financial difficulty, the school board was also faced with the problem of carrying out some needed repairs and improvements to the school buildings. Since many of the school districts have very low assessments, thus preventing the school board from raising sufficient funds to build adequate buildings, it became a question of how to meet these needs quickly and well.

In several of the more favored districts, it had been the practice to vote the taxes and to build their own school buildings. The buildings in the other school districts had been constructed with funds taken from the general operating fund. Such a procedure is manifestly irregular and cannot properly be continued.

In 1928, the school board evolved the idea of abolishing the several school districts, with the purpose of making one district of the entire parish designated as District No. 11, and voting a parish-wide bond issue of $1,000,000, the proceeds to be used for retiring the school indebtedness, for building and equipping new school plants, for repairing and enlarging existing school plants, for extending the consolidation program, for adding to the general building facilities, and for liquidating the indebtedness.

In the distribution of these funds as provided, it is planned to retire $463,250 of these bonds as they mature, and to make $455,000 available for new buildings and equipment.

In order to pay the indebtedness, and at the same time equalize the financial burden, the school board following the sale of the bonds, reimbursed the general fund for the buildings that had been erected with money from the general fund, and paid the indebtedness with the money made available in the general fund.

The program of school improvement, which was completed with the opening of the schools in September this year, has given the parish seven state-approved high schools of the standard type, and six grammar schools, four brick buildings and two stucco buildings. There are eight school centers outside of the city of Lafayette, six high schools and two grammar schools, a six-room school and a seven-room school. The improvements give every child in the parish access to a standard high school, and every child is eligible to free transportation at the hands of the school board.

As a result of the new program, all school districts have been abolished and the public schools of the parish are being operated on a parish-wide county-wide basis. The only school officials are members of the school board and the superintendent, who is a college graduate and a teacher of many years' experience. All teachers are employed by the superintendent. The school board has an overlapping membership, three members being elected every two years for a term of six years. The superintendent is appointed for a four-year period.

The board of school directors of Lafayette parish consists of L. L. Judice, president; J. G. St. Julien, vice-president; and J. W. Faulk, superintendent. A. A. McBride is the school supervisor.

NEW WISCONSIN INVESTMENT BOARD BEGINS TO FUNCTION

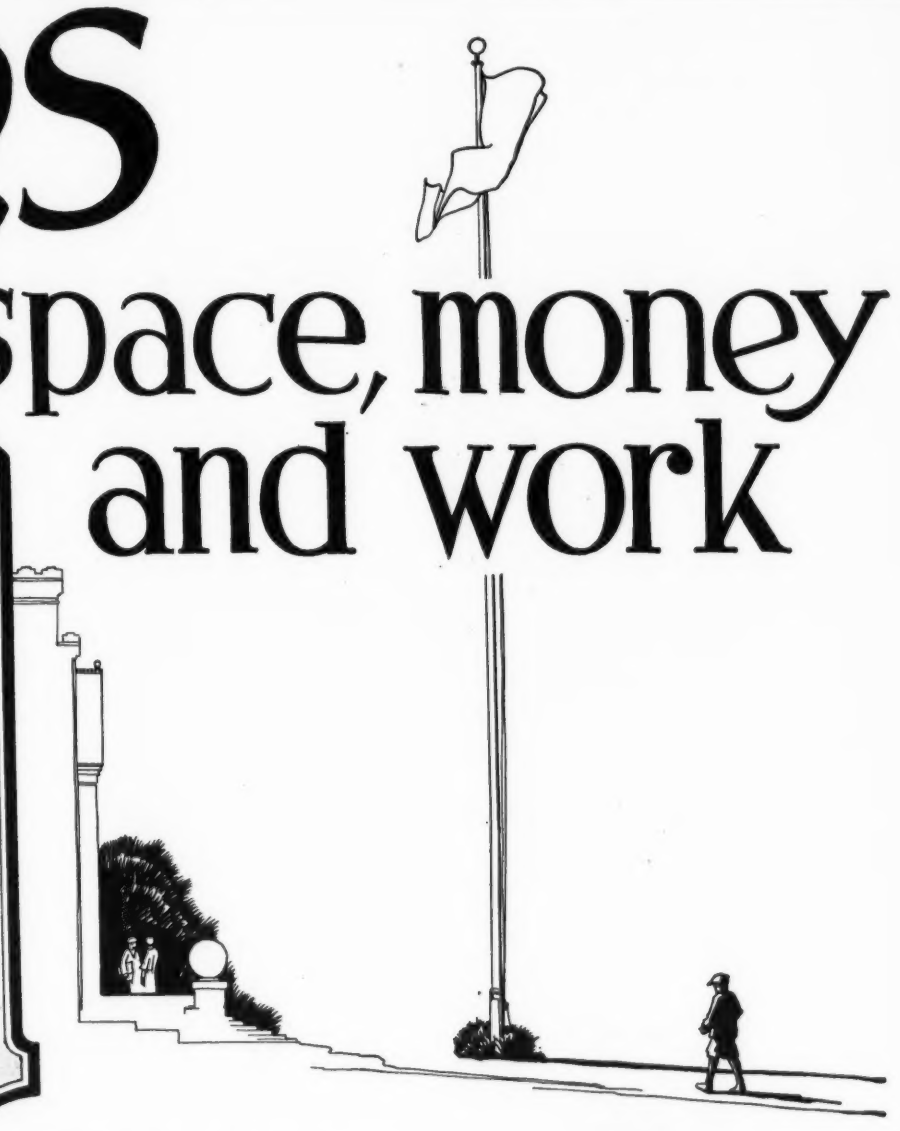
The new state annuity and investment board of Wisconsin, organized as a result of a new state law, held its first meeting on October 10. The board which consists of three bankers and two educators, was created to obviate certain difficulties in the investment of state funds which had resulted in the loss of large sums through lack of knowledge and mismanagement.

The new board consists of Mr. John H. Puelicher, Milwaukee, chairman; Mr. I. P. Witter, Wisconsin Rapids; Mr. Antone Kuckuk, Shawano; Miss Grace Ogden, La Crosse, and Mr. John Callahan, state superintendent of public instruction. The board will have charge of the investment of nine different funds which were formerly handled by seven different state boards, which means that the members of the board will handle from $20,000,000 to $25,000,000 in state trust funds. The board's director will devote all of his time to the work and will be in active charge at the state capitol.

It is estimated that the new board will have charge of over $21,000,000 in funds. The teachers' insurance fund alone amounts to $17,000,000, and the state fire fund to $2,000,000. Then there is the soldiers' rehabilitation fund of $731,000, and the state life fund which amounts to $228,000. In addition, there are a number of other funds which are less widely known.

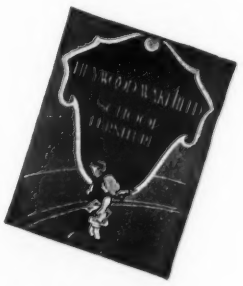
(Continued on Page 98)

Saves space, money and work



MOVABLE CHAIR DESK

THIS Heywood-Wakefield Movable Chair Desk will stand up under the most severe use. It saves space because it is made in one unit and is of a compact, yet comfortable, design. It saves money because it increases classroom capacity, combines desk and chair in one, and is produced by modern and highly efficient machinery. This desk saves time and trouble, too, since it permits quick, easy and thorough sweeping and cleaning of the classroom. . . . Notice how the standard, which supports the desk shelf, is curved out to permit more leg freedom and induce better posture. This is but one of the many practical features found in this modern school desk. If desired, a roomy storage drawer, which fits under the seat, may be secured. Inkwells for the desk shelf are also available. . . . Write to the nearest Heywood-Wakefield sales office for detailed information on this and other modern school desks.



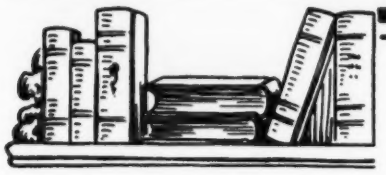
Send for our new School Furniture Catalogue 103-S

SALES OFFICES

Baltimore, Md.
Boston, Mass.
Buffalo, N. Y.
Chicago, Ill.
Dallas, Texas
Detroit, Mich.
Houston, Texas
Kansas City, Mo.
Los Angeles, Calif.
Minneapolis, Minn.
New Orleans, La.
New York, N. Y.
Oklahoma City, Okla.
Philadelphia, Pa.
Pittsburgh, Pa.
Portland, Ore.
San Francisco, Calif.
Seattle, Wash.
Spokane, Wash.

HEYWOOD-WAKEFIELD

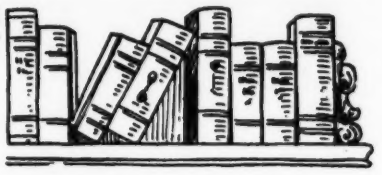
MAKERS OF PRACTICAL SCHOOL SEATING



Peterson Furniture

for

Laboratory and Library



1200 INSTRUCTOR'S DESK.

Practical for chemistry, physics, biology and agricultural laboratories. Equipped with four drawers, cupboard, support rods, sink, water and gas cocks.

YOU BUILD FOR TOMORROW'S NEEDS . . . EQUIP LIKEWISE

In Peterson Furniture only quality materials, modern approved designs and skilled assemblage are used. Over thirty-seven years of laboratory and library equipment building is your guarantee of long satisfactory service.

Our COMPLETE NEW CATALOG

of laboratory, library, domestic science, and vocational equipment will be sent to any school official or architect upon request.

L-5042 MAGAZINE RACK.

Especially designed for the children's department of the Library. It has five conveniently arranged compartments.

LEONARD PETERSON & CO., INC.

Manufacturers of Guaranteed Laboratory and Library Furniture.

OFFICE AND FACTORY:

1222-34 Fullerton Avenue Chicago, Illinois.

Distributors in:

New York Grand Rapids Minneapolis Kent, O. Richmond, Va. Kansas City
Huntington, W. Va. Sheridan, Wyo. Houston Dallas Omaha Baton Rouge Denver

(Continued from Page 96)

TRANSPORTATION COSTS IN WISCONSIN

The state education department of Wisconsin, has estimated that it costs about $250,000 a year to transport 12,800 children to school, with the cost of this service in rural communities growing steadily.

The state's share of the transportation cost last year was $170,500, while the school districts contributed as much, if not more. Last year there were 226 schools closed in the country districts, and 2,065 children who would have attended these schools were transported to other schools.

Districts having their own schools found that 10,731 children lived so far from the schoolhouse that they were transported. There was a total of 8,618 children, who lived more than two miles from their schoolhouses, while several thousand lived more than three miles from a school.

In some cases, where it is possible, transportation charges for children are paid for street-car transportation.

It is expected that the present year will witness a large increase in transportation costs, with the prospect that the service will cost the state alone $200,000.

COST OF TRANSPORTATION IN NEW YORK CITY SCHOOLS

Recent budget estimates of the New York City board of education show that the transportation of school children, both handicapped and normal, will amount to approximately $534,000 during the school year 1929–30. The larger part of this sum will be expended for the transportation of normal pupils to public schools located at distant points from the populated sections of the city, which are not provided with sufficient accommodations for the housing of the children.

It appears that the budget and finance committee is constantly confronted with the problem arising from the extensive home and apartment-building operations in the outlying sections of all boroughs except Manhattan. The constant shifts in population to new sections where convenient school facilities have not been provided has added to the troubles of the school authorities in their attempt to reduce transportation costs.

In the boroughs of Queens and the Bronx the greater part of the sum of $316,000 will be used for busses for conveying normal children from their homes to new schools. Public School No. 78, in the Bronx, in the farthest part of the borough, would be almost half vacant, if busses were not used to transport the children from neighboring sections. When the building was opened two years ago, there were no pupils for it to house, but a fleet of busses was placed in operation and these are still in use.

The problem of forecasting the educational needs of a community which is rapidly developing has proved quite a problem to the school authorities. Precaution must be taken not to erect large buildings in these sections, but a real-estate boom may sometimes cause a rush of new families with children for whom the accommodations are inadequate. On the other hand, if large buildings are constructed, there may not be a sufficient number of children to fill the school.

The board of education has been consistent in its transportation costs. This year, $535,000 was expended for this purpose, and the sum for 1929 is just $1,000 less. Approximately $200,000 is being spent annually for the transportation of crippled and cardiopathic children. In addition, provision has been made for the transportation of deaf, blind, sight conservation, and probationary pupils, and children in all-day care schools, at a cost of $17,960.

FINANCE AND TAXATION

—Joliet, Ill. The school board recently received bids on $75,000 worth of tax anticipation warrants. The warrants draw interest at the rate of six per cent and are payable on or before June 30, 1930.

—Anderson, Ind. The school board has adopted a new budget calling for the collection of $523,835 by taxation.

PRESSING SCHOOL PROBLEM

There is perhaps no more pressing problem in the whole field of public education at the present time than the problem of securing a sufficient number of teachers of proper quality to fill available teaching positions. We have the information necessary to operate good schools, we have the tools and the buildings and the systematic organizations all pretty well worked out, we can, in most places at least, get the money, but what we connot get is enough genuine, capable, professional teachers to carry on the work.

Roscoe Pullian, Superintendent of Schools, Harrisburg, Illinois

—Gary, Ind. The school board of East Gary has adopted a budget of $58,423 for the school year 1930, as against $60,000 for last year. The present budget represents a saving of slightly less than $5,000 over last year.

—Superior, Wis. The school board has adopted a budget of $702,786 for the school year 1930, of which $569,858 must be raised by taxation. The budget is a reduction of $70,000 from the budget of last year.

—Maywood, Ill. The school board has adopted a tax levy of $1,000,000 for the ensuing school year. The increase in the tax levy is due to the need of additional funds for the proposed building program. The board has called attention to the fact that the bonding power has been limited to $450,000 and that the entire cost of the building work cannot be raised by bond issue.

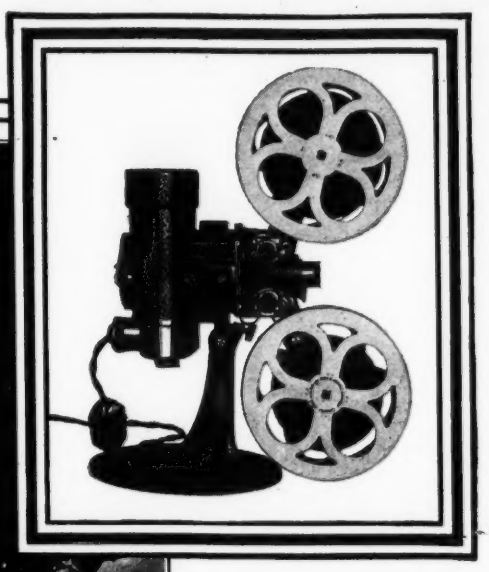
—The school board of Duluth, Minn., has adopted a budget of $702,786, as against an estimate of $718,290 for last year. The amount to be included in the taxes as the school levy will be $569,858, as against $639,907 included in the levy of last year. A reduction of $70,054 in the tax levy will mean fourteen cents on $100 valuation for the taxpayers.

—Peoria, Ill. The school board has discontinued the evening-school activities because of a deficit in the school funds. The present financial situation has been attributed to a natural increase in enrollment and annexed territory and to a reduction in school funds brought about by the annexation of new territory.

—Whitefish Bay, Milwaukee, Wis. Because a 4¾ per cent interest rate made it impossible to sell a bond issue of $145,000, the school board has found it necessary to authorize a new bond issue bearing an interest rate of 5 per cent.

—The county board of assessors of Cook county, Ill., has asked all school officials to reduce their tax rates. Under the existing situation in Evanston, such a proposed rate cut is declared inadvisable, because the schools have never levied on the basis of the established rate, but on their anticipated expenditures as listed in the annual budget. The maximum rate, it is pointed out, has never been approached, because school expenditures each year are not as high as they might be. It is expected that the matter of rate adjustment will be taken out of the hands of the local school boards.

(Concluded on Page 101)



Filmo 57-E Special School Projector 250 watt, 5 amp. lamp, fixed resistance, 45-50 condenser, geared rewind, large type sprockets and safety shutter. With case $205. Other models from $190 up.

The Fool-*Proof* part of visual education
FILMO SCHOOL PROJECTOR

VISUAL education must be wisely planned in all its parts. And not the least of these is projection of the film. A stubborn, complicated, inefficient projector can reduce to an absurdity the most brilliantly conceived ideas. For this reason the successful execution of a visual education program demands such a projector as Filmo 57-E.

It is difficult to run the Filmo School Projector the wrong way. With all operations simplified into two or three major adjustments, Filmo 57-E may be operated successfully by the most inexperienced teacher. Threading the film is made semi-automatic by the exclusive locking device which holds the film in place during the process. Speed is controlled by a convenient knob. The rest is merely a matter of turning on the power and letting the machine run itself.

An automatic safety screen slides into place whenever the machine is stopped. There is absolutely no danger of warping the film. And yet there is adequate illumination for any single frame in the film on which the teacher may wish momentarily to hold the attention of her class. This feature is only one example of the several trouble-free characteristics of the Filmo 57-E School Projector.

Its brilliant theater-clear projection has made Filmo the preferred machine in most schools and colleges. Its powerful lighting system and its utter freedom from flicker (the cause of eyestrain) have won for it an enviable reputation wherever it is used.

There are hundreds of visual education subjects already completed and procurable from film libraries. Write today for information on where to obtain these films and for the instructive leaflet, "Filmo in Schools and Colleges."

BELL & HOWELL
Filmo

BELL & HOWELL CO., DEPT. K, 1814 LARCHMONT AVENUE, CHICAGO, ILLINOIS
NEW YORK · HOLLYWOOD · LONDON (BELL & HOWELL CO., LTD.) ESTABLISHED 1907

BELL & HOWELL CO.
Dept. K, 1814 Larchmont Ave., Chicago, Ill.

Gentlemen: Please send me complete information on available visual education films and the leaflet, "Filmo in Schools and Colleges."

Name..... *School*.....

Street .....

City..... *State*.....

.. make them **SAFETY** lines with an *Anchor Fence*

A SCHOOL or community cannot discharge its obligation to children by simply pointing out the danger of running off the playground. Only by providing positive protection can relief from responsibility be obtained.

Children *must* stay on the playground where the boundary is marked by a neat and strong Anchor Playground Fence . . . a friendly barrier, standing ever-vigilant, ready to turn back scampering feet from the dangerous roadway.

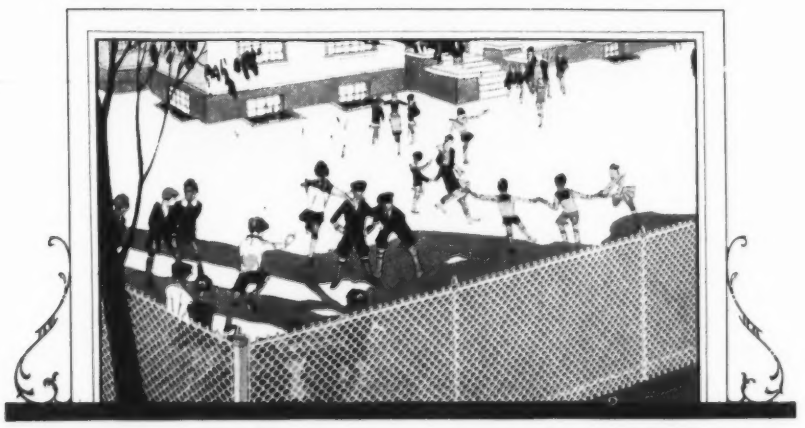
Phone the Anchor Fencing Specialist near you—have him show you the reasons for the exceptionally long life of an Anchor Fence. Have your playground properly enclosed by his skilled erectors.

ANCHOR POST FENCE COMPANY
Eastern Avenue and Kane Street, Baltimore, Md.

Albany; Boston; Charlotte; Chicago; Cincinnati; Cleveland; Detroit; Hartford; Houston; Los Angeles; Mineola, L. I.; Newark; New York; Philadelphia; Pittsburgh; St. Louis; San Francisco; Shreveport

Representatives in all principal cities. Consult local classified directory.

ANCHOR *Fences*



NEW STRENGTH NEW COMFORT

STEEL GRANDSTANDS for any Seating Need

Circle A Steel Grandstands are made in three types . . . Standard Portable, which is equally adaptable to either indoor or outdoor seating. Tubular Portable, for large capacity outdoor work, where removal of the stands may be necessary. Permanent Steel Grandstands for economical, safe and comfortable seating for the large outdoor installation where portability is not a feature.

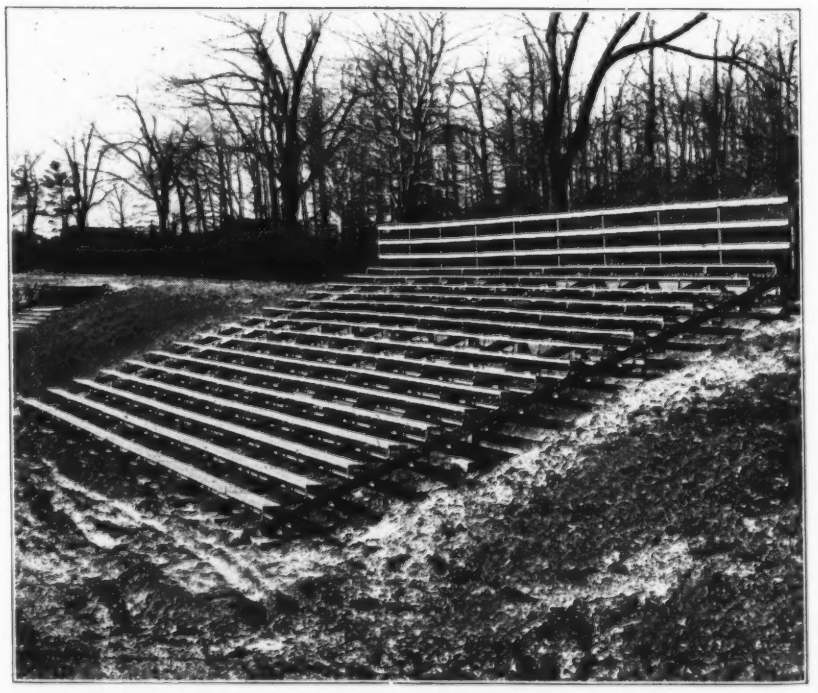
All three types of Circle A Steel Grandstands are built entirely of steel, with the exception of the foot and seat boards. Designed in accordance with the specifications of the American Institute of Steel Construction, they provide more than ample strength against the greatest live load that can be applied.

Send today for detailed, illustrated folder.

Circle A Products Corporation
613 So. 25th Street, Newcastle, Indiana

CIRCLE A STEEL GRANDSTANDS

Standard Portable ... Tubular Portable ... Permanent



30 Years devoted to the manufacture of Play Equipment *Exclusively*

The Hill-Standard FUN-FUL line is the most complete made. It was pioneered and developed by the world's largest manufacturer and is backed by a liberal, money-back guarantee.

Write for our complete catalog.

Division F

HILL-STANDARD CO.

EST. 1900

Anderson, Indiana, U.S.A.

(Concluded from Page 98)

—Walbridge, Ohio. The county budget commission has allowed the board of education $25,340 for school purposes during the school year 1930. The tax rate for school purposes is 12.5 mills, which is .20 mills lower than the previous year.

—Watertown, Wis. The 1930 budget of the school board amounts to $103,206. The budget for 1929 amounted to $208,632.

—Racine, Wis. The 1930 budget of the school board includes an appropriation of $40,000 for new school sites. The money will be used for obtaining a site in the southwest section for another new school.

—Representatives of a men's club in the Washington High School, Indianapolis, Ind., have begun a movement to protest against the reductions in the budget appropriation for the coming year for the high school, as proposed by the local chamber of commerce. It was pointed out that the chamber-of-commerce figures were based on past enrollment of the school, which is unfair due to an increase of fifty per cent in the last two years. The items requested for the high school were deemed necessary by the staff for the effective operation and development of the school.

—Ansonia, Conn. The school board has adopted a budget for the school year 1930, amounting to $297,500, which is a reduction of $1,000 from that of a year ago. The largest item in the budget is $254,000 for salaries.

—Kenosha, Wis. The board of education has asked $58,000 less for the operation and maintenance of the school system in its 1930 budget, despite the increase of $49,000 in estimated expenditures. The budget set the cost of operation of the schools at $1,018,835 for the year, the first time in the history of the city that the school costs have exceeded the million-dollar mark. The year 1929 will close with a surplus of $38,381, making Kenosha one of the few cities in the state operating without a deficit at the end of the year.

The capital expenditures include an item of $200,000 for the completion of the Lincoln Junior High School, which is to be completed in September, 1930, at a cost of $600,000.

—Iron River, Mich. An audit of the school funds for the fiscal year ending June 30, 1929, shows that the actual net operation expense for the year was $218,256, or $10,000 in excess of the estimate. The difference between the total expenditures and the operating cost was $36,157, which is attributed to the cost of erecting a new school.

—Maywood, Ill. The Proviso high school board and the board of School Dist. 89 have been requested by the city government to reduce their appropriations for the next year, in order to prevent a threatened increase of one hundred per cent in city taxes. At a recent meeting of the town board, the appropriation which had been set at $289,000, was reduced to $200,000, and similar action has been asked by the high-school board. The appropriations set by the high-school board, $600,000 for 1928, and $1,000,000 for 1929, are the chief objections. The school board had materially increased its appropriations to finance the addition to the new school.

—Dayton, Ohio. The school board has adopted plans for meeting the deficit of $94,000 in the school funds, caused by a shortage in the last tax distribution. The board has ordered a reduction of $75,000 in the budgets of the superintendent and business manager, which calls for a limit on school supplies and for the elimination of a program of school repairs and improvements.

The board has adopted a budget of $2,961,894 for the school year 1930. This includes approximately $750,000 to be derived from a two-mill tax levy to be voted upon in November.

—West Allis, Wis. The school board has prepared a building budget amounting to $580,000, which covers a three-year period. Of the total amount, $268,000 has been set aside for the 1930 building program. This includes new units for two junior high schools, an addition of six rooms to another school, and a site for a junior high school. The total budget, including building, maintenance, and salaries, amounts to $2,808,747.

—Manitowoc, Wis. The city council has created a sinking fund of $20,000 to aid in decreasing the school deficit and to make a start toward coordinating the fiscal years of the board of education and the council. An emergency fund of $20,000 has been provided for repairs that will be necessary during the year. The school budget for the year 1930 amounts to a total of $322,651.

—New York, N. Y. At a conference of the school officials and the board of estimate, reductions amounting to approximately $276,000 have been agreed upon for the school budget of 1929–30. It is estimated that the budget request for the year will be approximately $136,330,000. The largest item contributing to the reduction in the budget was that for the Brooklyn Industrial High School for Girls, which is not expected to be ready for use at the time agreed upon.

—Jacksonville, Ill. The budget of the school board indicates that there will be a deficit in both the building and repair fund and the general fund. The money in these funds has been exhausted and it will be necessary to issue tax-anticipation warrants.

—Maywood, Ill. The school board has cooperated with the local village board in a movement to reduce the tax burden. It was voted to reduce the 1928 school appropriation, which had already been lowered from $200,000 to $149,800.

—Fort Wayne, Ind. The school board faces a reduction of $23,000 in its operating expenditures for 1929–30 due to a reduction of one cent in the special school fund. The school tax levy has been reduced from 88.3 to 87.2, or a reduction of one cent from the original amount, and an increase of seven cents over last year.

The tax board has asked the local school officials to make a reduction of $10,000 in the administration and supervision department, a $10,000 reduction in the janitors' and engineers' payroll, and $3,000 in the supplies for janitor and instructional use.

The school levy of 87.2 is expected to provide sufficient funds to operate the school system without running into debt. Last year on a tax rate of 80.2, the school board closed the year with an indebtedness of $300,000, but this will be eliminated when the new budget for 1931 is prepared.

PER CAPITA COSTS FOR HIGH SCHOOLS IN NEW JERSEY

The state education department of New Jersey, in a recent report, offers some valuable information on per capita high-school costs for tuition purposes for the school year 1927-28. The data were furnished by the secretaries and district clerks of the high-school districts and were approved by the city superintendents and supervising principals.

The median cost for the 156 districts maintaining high schools other than junior high schools in 1927-28 was $161.51 per pupil in average daily enrollment, which is an increase of $5.37 over that of 1926-27. The lowest cost for high schools for 1927-28 was $88.78 per pupil in average enrollment, which was $11.79 more than the lowest cost for 1926-27. The highest in 1927-28 was $337.28 per pupil in average enrollment. Fifty per cent of the high-school districts had costs in 1927-28 between $134.31

Save Space by Combining Departments with Sheldon Multi-Service Tables

Where it is desirable to combine the chemistry laboratory and the lecture room, or chemistry, physics and biology laboratories and lecture room, Sheldon Multi-Service Tables with Adjusto-Posture Seating meet the requirements especially well.

Students may sit down or rise quickly and noiselessly. Adjusto-Posture Chairs may be swung around the end of the table out of the way in an instant when the student desires to stand and work. Drawers and cupboards are readily accessible whether the pupil is standing or sitting.

Sheldon Multi-Service Tables are the result of a tremendous amount of research and experimentation to develop proper sized tables, the most logical sizes and arrangements of drawers and cupboards, best location of sink and service outlets, convenient seating, etc. They will give you the greatest student capacity in the room space available. Write for literature.

E. H. SHELDON & COMPANY

Laboratory Furniture Specialists for 30 Years.

MUSKEGON, MICHIGAN.

and $201.13. The variation among the middle 50 per cent of the districts is becoming larger each year. The middle 50 per cent of the high school costs varied not more than $45.25 in 1923-24, while in 1927-28 the variation was $66.82.

The median cost per pupil in average enrollment in high-school districts not maintaining full four-year courses was $24.79. In school districts maintaining junior high schools, the median cost per pupil in average enrollment for senior high schools was $202.59 in 1927-28.

The average cost of high schools for the state in 1927-28 was $182.40 per pupil in average enrollment, of which $26.11 was due to rental charges. Tuition rates charged from $50 to $175 per pupil per year. The median rate of tuition charged in 1927-28 was $100 per pupil per year.

The median cost per pupil in average enrollment in the junior high schools in 1927-28 was $155.93, as compared to $158.45 in 1926-27. The tuition rates charged ranged from $50 to $150 per pupil per year. The median rate of tuition charged in 1927-28 for junior high schools was $100 per year. The average cost of junior high schools for the state was $166.45 per pupil in average enrollment, of which $29.80 was due to rental charges of five per cent on the original cost of buildings used as junior high schools. The rental charge for junior high schools was $3.69 greater per pupil in average enrollment than for senior high schools.

SCHOOL BOARD NEWS

—Northville, Mich. The school board has entered upon the new school year with all bills paid, but with a depleted treasury. All contracts for needed improvements and repairs on the schools were completed during the summer, at a cost of $12,000.

—East Chicago, Ind. The school board has taken up plans for the elimination of portable schools. It is planned to provide permanent housing for all school children as fast as the funds are available. The first temporary school center, to be made into a permanent building, is the Eugene Field School, now housed in an eleven-room portable.

—St. Joseph, Mich. The members of the board of education have made a number of visits to nearby cities to obtain ideas for carrying out a program of school expansion.

—Corry, Pa. The teachers of the local public schools, members of the school board, and other school officials were the guests of the local rotary club at a dinner meeting held in the Hotel Corry. The service club annually holds a banquet for the teachers and the members of the school board as a get-together meeting. The principal address was made by Dr. L. H. Dennis of the state education department of Pennsylvania.

—The school board of Crawfordsville, Ind., has been made defendant in a suit to test the validity of the state teachers' tenure law. Mrs. Mary Cave Ramsey who filed the suit, claims that she is entitled to continue as a teacher in the schools, but that when she presented herself this fall, she was denied a new contract. The school board took the position that since Mrs. Ramsey had been married since her last contract was signed, that she was no longer entitled to continue as teacher.

—Sturgis, Mich. Through the generosity of Mr. C. L. Spence, in turning over to the local board of education stock holdings in the Sturgis Athletic Association, the city schools have come into possession of a fine athletic plant. The gift which has been accepted by the board, includes not only a five-acre inclosed field, but also a quantity of athletic supplies.

—Cheyenne, Wyo. The old high-school building has been remodeled for use as a school administration building. It will contain well-arranged office space for the superintendent of schools, the school supply clerk, the school nurse, the attendance officer, the supervisors of special subjects, and the director of the special classes.

—LaSalle, Ill. The school board has contracted with the LaSalle County Carbon Coal Company for the year's supply of coal, at $4.75 per ton, which is a saving of 25 cents on each ton of coal.

—Schenectady, N. Y. A group of the local school janitors recently asked the board to raise their salaries from $1,750 to $1,900 per annum. The request for the increase was made on the contention that the present salary is not adequate for the support of a family.

—Columbus, Ohio. The school board will shortly take up the matter of the establishment of a pension fund for city-school custodians, including janitors and engineers. In compliance with a state law, the board has received a petition bearing the names of more than half of the school custodians requesting the establishment of a pension fund.

Under the law, four per cent of the annual wages is to be deducted from the pay of school custodians, which will be supplemented by not less than one tenth of one per cent, or more than one half, of the sum collected from the pay by the board of education. Three trustees of the fund will be named, two to be elected by the board, and one by the member custodians.

—Saugatuck, Conn. The school board has given increases of fifty cents in pay to janitors who must work evenings. Such janitors will now receive $2 per evening, instead of $1.50 as formerly.

—A suit has been begun in the Circuit court of Madison county, Ill., for the purpose of testing the authority of the Alton school board to assign Negro children to a junior high school. In the suit, the board of education and Supt. W. R. Curtis were alleged to have denied to Stephen E. Miller the right to attend the Alton High School. The boy was given a certificate authorizing him to enter high school, but on September 9, when he presented himself for admission, he was told that he must go to Lovejoy School, which is a junior high school and attended by Negro pupils.

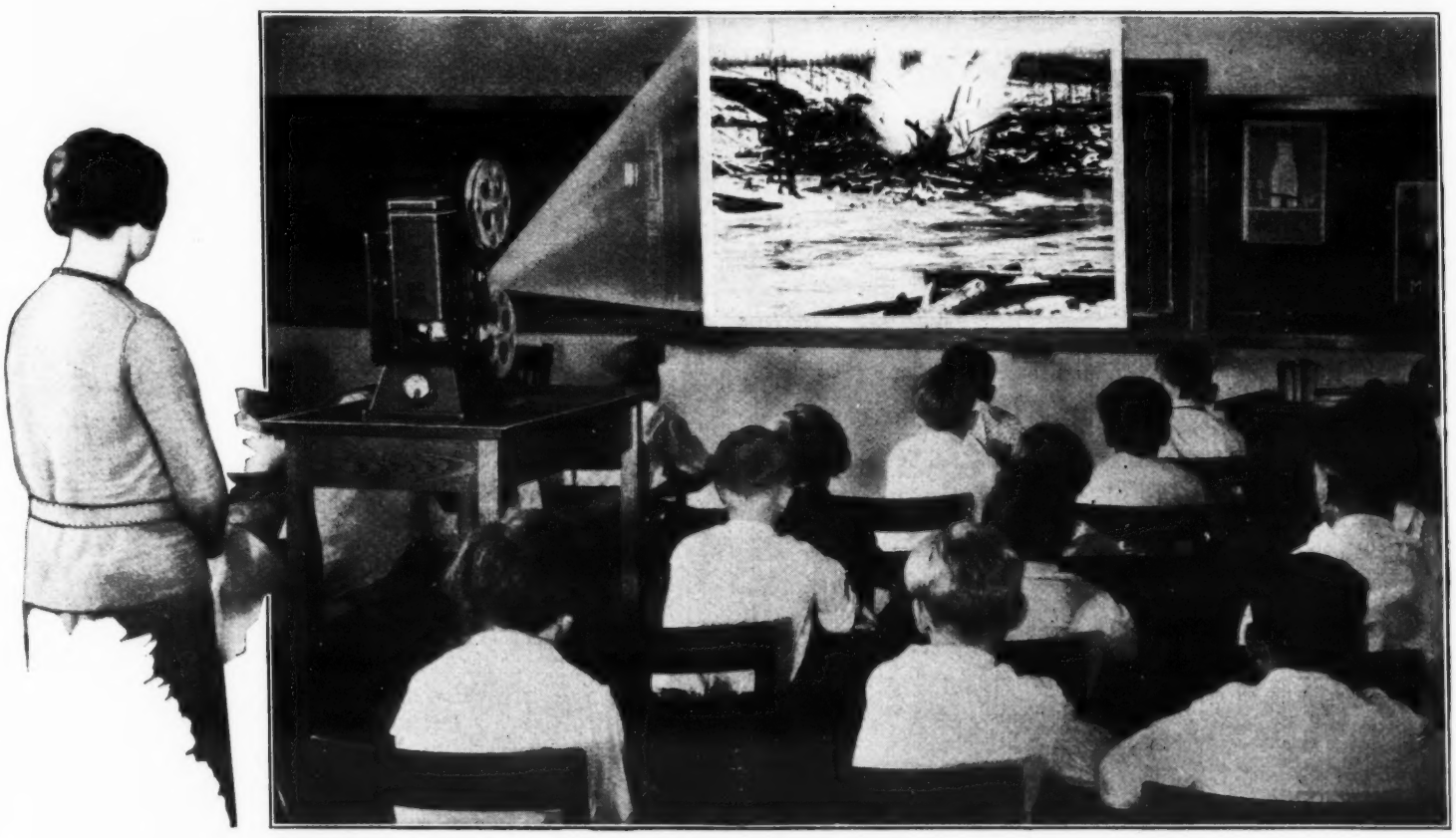
—The school board of Grand Rapids, Mich., has been asked to adopt a suitable method for protecting school children against traffic in the vicinity of the school buildings. The police department has notified the board that it will be unable to provide traffic officers at all schools.

—The county board of education of Marion county, Ind., has taken steps toward providing greater safety for school children in the rural schools. To this end, the state police department has been asked to eliminate the practice of automobile drivers in passing school busses. The state motor club has been asked to place traffic warning signs near school buildings not yet marked or protected.

—Cleveland Ohio. The president of the local street railway company has been asked to reconsider his decision to refuse half fares for school children. The contention of the railway company that it could not afford the half-fare system was met with the assertion of the parent-teacher association that it would fight out the matter of half fares. The clerk of the school board has estimated that it would cost the board almost $40,000 annually for full fares, where under the half-fare plan the cost was $18,000 a year.

—Flandreau, S. Dak. The school board has adopted a budget of $38,000 for the school year 1930, which is a reduction of $7,000 from the sum provided in the past two years. The tax rate for the year is 11.5 mills, as compared with 12.3 mills for last year.

This teacher has a new ally in her work

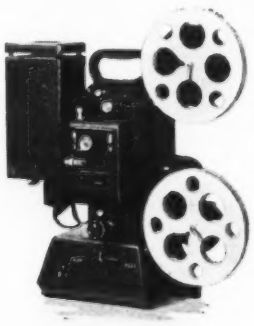


"NEWSPAPERS ARE MADE OF WOOD."

How astounding that idea is to a child! What a wonderful story it makes! And yet the newspaper, moulder of thought and action, is only one of many features of a complex civilization with which children should be familiar if they are to understand present day life.

Words cannot tell this story

How to bring this about? School days are short. No teacher, and no pupil, has time to trace these stories with the spoken or printed word. But *this* teacher has a new ally in her work. She simply steps up to a device near the back of her classroom and turns a switch.



This new ally does it

Immediately the story leaps to life on a silvered screen. Virgin forest, felling of trees, blasting a log jam, floating logs to the mill, pulp-making, paper-making, a press-room—finally the finished newspaper on a metropolitan news stand. All this is unfolded in a motion picture prepared specifically for classroom use.

In fifteen minutes—

In fifteen minutes the child *sees* more than he could *read* in fifteen hours. And this is done with safety and simplicity. All Eastman Classroom Films are made on sixteen millimeter *safety* stock. They are shown with the aid of Kodascope "A," an efficient and durable projector which any teacher can operate.

Write for your copy of "The Story of Eastman Classroom Films." Eastman Teaching Films, Inc., Subsidiary of Eastman Kodak Co., Rochester, N. Y.

Eastman Classroom Films

Not very long ago writing materials looked like this.

Today Progressive Schools and Offices Are Rapidly Adopting—

"Penocrat"

the wonderful writing fluid which comes in a concentrated paste form. It makes a permanent blue-black ink which is excellent for fountain pens and general purposes. "Penocrat" is clean to handle, dilutes instantly, is convenient to ship and to stock, and saves approximately 50% in cost.

*Write for further details.

THE AMERICAN CRAYON COMPANY

HOME OFFICE AND FACTORIES "Old Faithful" 736-836 HAYES AVE., SANDUSKY OHIO

NEW YORK OFFICE 130 WEST FORTY-SECOND STREET
SAN FRANCISCO 116 NEW MONTGOMERY STREET
DALLAS, TEXAS SANTA FE BUILDING

LEADERSHIP SINCE 1835 94 YEARS OF FAITHFUL SERVICE

COLOR IN THE SCHOOLROOM

COLOR in the classroom for the vivid presentation of facts by figures and diagrams is a distinct aid to the teacher. Its use is steadily increasing with the approval of psychologists and superintendents.

Colored chalks manufactured by Binney & Smith Co. are the finest colored chalks it is possible to make . . . just as AN-DU-SEPTIC Dustless Blackboard Chalk and CRAYOLA Wax Crayons stand for excellence in their respective fields.

No. 400 — Colored Chalk Crayon; contains 144 sticks of Grade I colored chalk. Packed in a wooden box — 16 colors to the box. Obtainable in solid colors or any assortment of colors desired.

BINNEY & SMITH CO.
41 East 42 Street New York, N. Y.

SCHOOL ADMINISTRATION NOTES

THE PROGRESS OF THE COUNTY-UNIT SYSTEM OF ADMINISTRATION IN ARKANSAS

With the adoption of the county-unit system of school administration in Pike county, Arkansas, where an overwhelming vote favored the measure, a signal victory has been won by the public-school officials in the state, in the opinion of Claud M. Hirst, state superintendent of public instruction. Pike is the first Arkansas county to adopt the full unit system of administration, as compared with Pulaski, which comprises three districts.

The first step for a more effective system of school administration was taken in 1927, when the Arkansas legislature passed a special act, allowing Pulaski county to vote on a proposal, which consolidated 40 local districts into three big units. Again in 1929, the legislature by another enactment extended the privilege to all counties in Arkansas, and Pike was the fourth county to submit the proposal to a popular vote. Several weeks prior to the special election, the unit system was defeated in Mississippi county on a close vote, and two other counties rejected it by decisive majorities.

Mr. Hirst believes that Pike county, which is almost entirely rural, will give the school officials an opportunity to demonstrate the worth of the unit system in the management of the rural as well as the city schools. Mr. C. G. Bolin is superintendent in Pike county. Pulaski county has been successful in its school administration, having a large rural district in addition to the Little Rock and North Little Rock city units.

Arkansas in 1900, had 4,900 local school districts and in 1910, the number had grown to 5,097. The next decade further increased this to 5,118, and it was at this point that the trend toward consolidation began.

Of the 75 counties in the state, two have the same number of local school districts as in 1900, and 18 counties have more districts than in that year. Washington county is first on the list with 134, followed by Benton with 123, and Madison with 108. Washington county includes Fayetteville, the seat of the University of Arkansas.

The campaign on behalf of the county-unit system was aided in 1928 by a series of addresses delivered to the county superintendents by Mr. Edgar S. Richardson, superintendent of Webster Parish, Minden, La. Mr. Richardson was the speaker at the annual state conference of county leaders and his appeals for consolidation were reenforced by illustrated reports on the splendid results accomplished in Louisiana.

Under the legislative enactment, any county in Arkansas may, by petition, call a special election on the county-unit proposal. It is probable that the next year will witness a number of special elections in Arkansas, as the movement for larger units has made considerable progress. In Pike county, the local forces were assisted by the state education department staff, and the same aid will be given to other counties calling for a submission of the county-unit proposal.

ROANOKE, VIRGINIA, ADOPTS LITERAL GRADING PLAN FOR SCHOOL REPORTS

The school system of Roanoke, has recently adopted a literal grading plan, prepared by Supt. D. E. McQuilkin, as a more effective means of giving group values for achievements of pupils on single or multiple assignments. The plan provides for definite values for daily recitations, written tests, term progress, and period progress, as well as pupils' attitudes, habits, and characteristics. It does not provide for an average of all the grades, but rather seeks to record in group classification the teacher's evaluation of the extent of progress and the degree of mastery by the pupil of the work covered, including his growth in citizenship.

Under the plan, seven distinct scholarship grades are provided. Pupils marked E, or excellent, are practically perfect in accuracy and completeness of subject matter. Such pupils work with enthusiasm and without suggestion, complete their assignments promptly, give evidence of ability to apply themselves, are cooperative and helpful in classroom activities, demonstrate ability in leadership, prove dependable, and are rated as superior pupils.

Pupils marked G, or good, are highly satisfactory in their achievement of the subject matter. They attack their work with good spirit upon suggestion, complete their tasks neatly and thoroughly, are able to cooperate and to offer helpful suggestions, show some leadership, are usually dependable, and are rated as satisfactory pupils.

Pupils marked M, or medium, are considered medium in their achievement of the subject matter, are good workers if given frequent suggestions, complete their tasks reasonably well, render fair cooperation, offer little initiative but are willing to be shown, lack dependence, and are rated fair pupils.

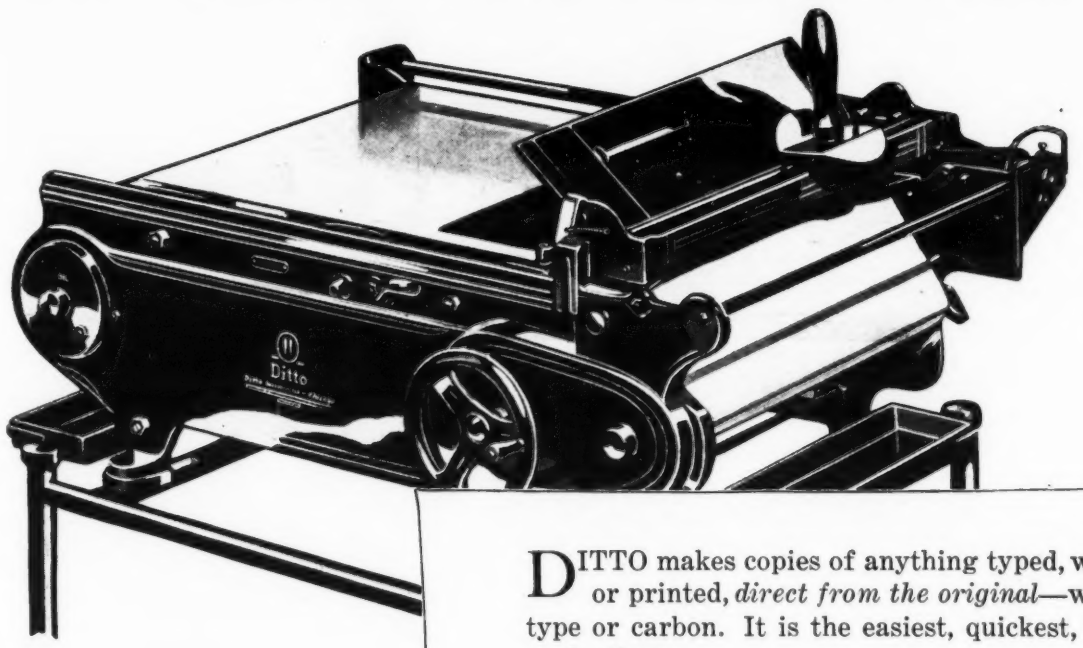
Pupils marked P, or poor, produce an unsatisfactory quality of work which is barely acceptable, are slow in beginning work, require much pressure to get the work out, which is often incomplete and carelessly done, retain only a small part of what is learned, are seldom helpful, require urging to take part in class, are not dependable, and are rated as unsatisfactory pupils.

Pupils marked P-1, are faithful, make slow progress, and sometimes need to repeat the work.

Pupils marked F, or failure, are decidedly unsatisfactory in the quality of their work, show lack of comprehension of subject matter, are inattentive, shirk their school duties, waste time, wait to be told what to do, misunderstand assign-

(Continued on Page 106)

America's schools have adopted Ditto for convenience and economy



In classroom and school office many operations of daily routine are looked upon as "Ditto jobs".

DITTO makes copies of anything typed, written, drawn or printed, *direct from the original*—without stencil, type or carbon. It is the easiest, quickest, cheapest way to duplicate.

Apply that basic Ditto function to countless daily routine tasks in classroom and school office, and you effect immediate and startling savings of time, effort and money.

Ditto is adaptable to the most modern educational ideas. Each pupil may have definite individual assignments—including typed material, maps, drawings, charts; prepared with minimum effort, in the shortest possible time. One principal says "Ditto has emancipated my teachers; released valuable hours of time spent in routine drudgery."

Equally helpful in school offices, Ditto handles many tasks with ease, speed, accuracy and economy not approached by any other method. "Ditto is my mechanical secretary" says an enthusiastic supervisor; "handles any number of necessary tasks — some of them impossible without Ditto."

HOW YOU CAN USE DITTO

in class rooms:
- Examination and test questions
- Study outlines
- Drawings, maps and charts
- Laboratory experiments
- Music scores
- Lectures and notes
- Instructions

for student activities:
- Athletic schedules
- Election ballots
- Dramatic manuscripts
- Music arrangements
- Posters and drawings

in the office:
- Instructions to teachers
- Notes of meetings
- Reports to Board of Education
- Bulletins
- Office forms
- Card records

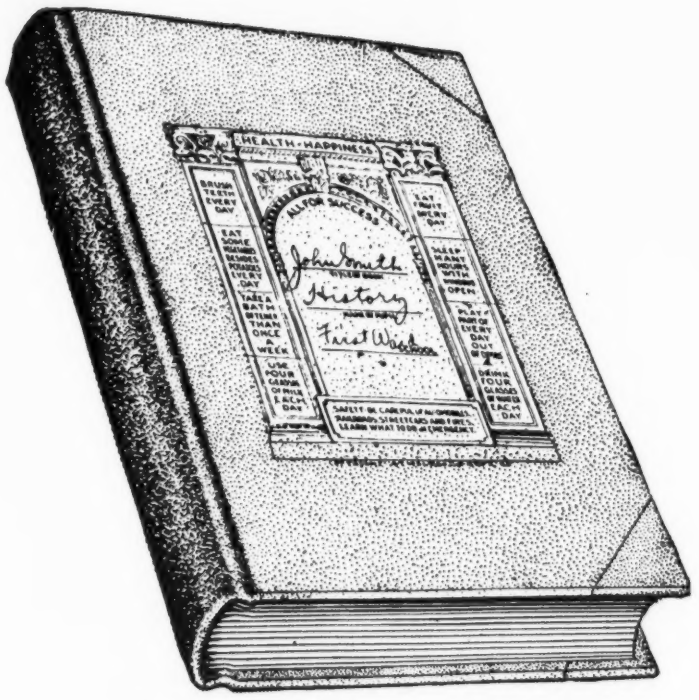
Get the facts about Ditto—costs nothing, may lead to big savings. Simply write for our booklet, especially prepared for schools; an interesting treatise on an up-to-the-minute method which has become indispensable in thousands of schools as well as in most leading business and professional offices. Write today.

Ditto, Incorporated

Manufacturers of Duplicating Machines and Supplies

2296 W. Harrison Street, Chicago, Ill.

GUARD THE HEALTH



"The Cover with the Double Corners" does not deface or mar the book

. . . of your pupils by use of

WALRAVEN HEALTH BOOK COVERS

The use of book covers has become an established program in the majority of schools throughout the United States and Canada.

Walraven Health Book Covers are being used in thousands of school rooms

BECAUSE

of the double corners, the double back where strain on a school book is greatest; the adjustability of the covers to practically all textbooks; the Health Chart which is a health guide for the child throughout the entire nine months; and the saving in school property, in that Walraven Covers not only double the life of a textbook, but *they do not in any way deface or mar the book itself.*

Samples and prices furnished upon request.

A. T. WALRAVEN BOOK COVER CO.

Dallas Chicago Atlanta Toronto

Continued from Page 104)

ments, annoy classmates, require frequent coercion, and are in need of unnecessary and expensive reteaching.

Pupils marked F-1 are faithful, but unablel to make satisfactory progress in schoolwork.

Pupils are also rated according to five conduct grades. Pupils marked E, or excellent, are exceptionally good, are always obedient, trustworthy, and willing to stand alone, are respectful, considerate of others, a good leader in teamwork, have a forceful personality, are immune to average temptations, require little guidance from the teacher, and are an inspiration to the group.

Pupils marked G, or good, are usually obedient, trustworthy, courteous, attentive, prompt, orderly, observe the rules and regulations, have strong convictions of right and wrong, but not always willing to stand alone, are helpful, and satisfactory in conduct.

Pupils marked M, or medium, are fairly cooperative, but require guidance, respond favorably to reprimand, usually maintain good order, and do not present a problem of discipline.

Pupils marked P, or poor, show the characteristics of stubbornness, impatience, boisterousness, anger, impudence, and disregard of the rights of others, but often give hope of some improvement.

Pupils marked F, or failure, show the characteristics of stubbornness, lack of respect for authority, disrespect, disobedience, impudence, laziness, are often tardy or truant, lax in the preparation of lessons, and are rated as unsatisfactory pupils, with little tendency toward general improvement.

A report is sent regularly each six-weeks' period to the parent for examination and signature.

A pupil who makes a grade of E or G on any subject for the term is excused from examination on that subject, provided the grade on citizenship is E or G. A pupil whose grade does not merit exemption from an examination is required to make a P or better grade on both classwork and examination on each subject.

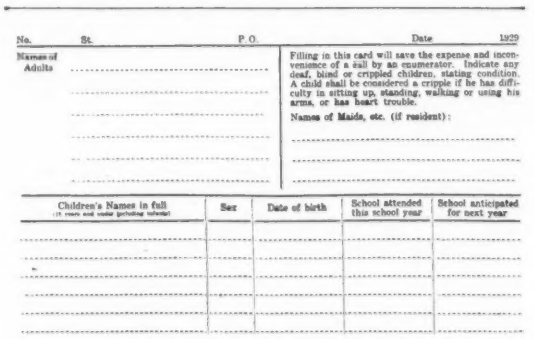
THE PROGRESS OF INDIVIDUAL INSTRUCTION IN THE CITY SCHOOLS

A recent statement of the U. S. Department of the Interior at Washington, shows that the movement to adapt the work of the school to the ability and needs of individual pupils, has made considerable progress within recent years. It has long been known that children differ in ability, but since means have been devised for measuring the comparative abilities of school children, the need of fitting the school to the individual child has become more apparent.

It was brought out that though various plans and devices have been tried to make it possible for children to progress in school according to their individual ability and industry, no one plan has made the child independent of every other child in the school. Ability grouping has become so common that it may no longer be considered an experiment, but it has not entirely solved the problem of providing for individual differences, and possibly much more should be done to improve the technique in the future.

THE DETROIT TESTING PROGRAM

The Detroit school testing program is being modified or enlarged each year in order to make it fit the instruction program of the schools which is always in process of modification. With the increased use of tests and their results, there is a need for more adequate tests and for more adequate methods of using the results of the tests. It has thus become necessary that the testing program be constantly changed by revision, when necessary, both of the content of the testing materials and of the methods of using the results.



No. St. P. O. Date 1929

Names of Adults .....

Filling in this card will save the expense and inconvenience of a call by an enumerator. Indicate any deaf, blind or crippled children, stating condition. A child shall be considered a cripple if he has difficulty in sitting up, standing, walking or using his arms, or has heart trouble.

Names of Maids, etc. (if resident): .....

Children's Names in full (If years and under including infants)	Sex	Date of birth	School attended this school year	School anticipated for next year

A CONTINUOUS SCHOOL CENSUS CARD
This card, measuring 5 by 8 in., is in use in the Shaker Heights, Ohio, School System

A number of modifications have been proposed this year, which will tend to increase the usefulness of standardized tests to Detroit teachers. The principal change is in the method of expressing a pupil's score as group 1, 2, 3, 4, or 5, which provides for a ready classification of the children on the basis of their ability in each particular subject, and offers the added advantage of a simple evaluation of the child's ability in terms that everyone can understand. The plan has as one essential element, the use of a uniform time allowance for each test in all the grades in which it is used, in place of varying time allowance in the different half grades. The modification simplifies the actual giving of tests, particularly in split sections, and facilitates the comparison of scores of pupils in different grades. The class score for all the tests this year is the median in place of the point score which was used to summarize the five-group plan.

Another form of interpretation of individual scores will be provided during the next year. This is the relative score plan of interpretation, in which provision is made so that a child's score may be interpreted not only with reference to the grade in which he is located, but also with reference to his age and his brightness. This type of interpretation meets the objections raised to the former plan, since it makes it possible to compare what a child does with what may be expected of him in terms of his status in intelligence.

Other changes in the program consist of the modification of tests previously used and the addition to the regular program of tests which have been used experimentally. Of the new tests now a part of the regular program for the first time, the most important are arithmetic test 6, each form of which has been designed to cover the work of a particular grade, and the art design test. The latter test was used during the second semester of the year 1928–29, but has not been made a part of the program previously, while the arithmetic test 6 has never had city-wide use.

A STUDY OF ADMINISTRATIVE OFFICES

The arrangement of administrative offices in some cities is given only slight consideration in the general plant program of the school system. The office space may be adequate as to amount, but the arrangement, equipment, and provision for the

(Continued on Page 109)

George Hossfield
the new
WORLD'S
CHAMPION

Other Championships
at the 1929 International
Typewriting Contest
Won on the Underwood

The World's Amateur
Typewriting Championship
won by Chester Soucek (Penn.)
at the rate of 118 words per minute

The World's School Novice
Typewriting Championship
won by Florence Bell (Ont., Can.)
at the rate of 91 words per minute

The American School Novice
Typewriting Championship
won by Belva Kibler (Ariz.)
at the rate of 88 words per minute

A complete copy of the official records
will be sent upon request.

For the 24th *consecutive time*
THE WORLD'S
TYPEWRITING CHAMPIONSHIP
has been won on the
UNDERWOOD

These are the fastest fingers in the world!

They are the miraculously nimble fingers of Mr. George Hossfield, World's Champion Typist, who has staged a remarkable comeback. Saturday, Sept. 28, at Massey Hall, Toronto, he typed for one solid hour at the astounding rate of 135 net words per minute — more than 11 strokes per second!

No other fingers achieved such lightning-swiftness combined with such bull's-eye accuracy.

It is natural that the new champion's fingers—*and the fingers of every other World's Typewriting Champion*—have leapt into fame from the keys of the Underwood. No other typewriter can match its records for speed and accuracy.

Year after year, in contest after contest, it has been put to the most grueling tests imaginable by the fastest typists known—and the Underwood has never failed them.

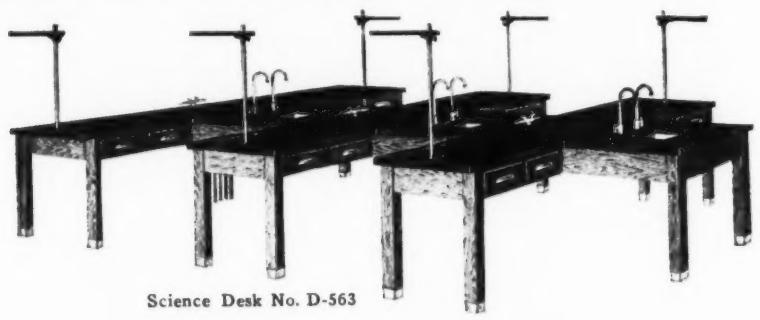
UNDERWOOD
TYPEWRITER COMPANY
Division of Underwood Elliott Fisher Company
342 Madison Avenue, New York, N. Y.
"Underwood, Elliott-Fisher, Sundstrand—Speed the World's Business"

UNDERWOOD
THE MACHINE OF CHAMPIONS

Increase Student Capacity of Your Present Buildings

Use Laboratory Every Period of School Day

Increase the student capacity of the school by using the laboratory class rooms every period of the day. Kewaunee Lincoln Science Desks not only accommodate Laboratory classes every period of the day, but are designed to allow more students to comfortably work in each class. They allow maximum use of every available square foot of floor space and reduce building cost by conserving plumbing.



Science Desk No. D-563

Kewaunee

Lincoln Science Desks Have All These Advantages

With the Kewaunee Lincoln Desk, no lecture room is required. All students face the instructor while doing all the work in one place.

The instructor may give demonstrations or hold class recitations in the same room with the experimental work.

No definite periods need be set for demonstrations and laboratory work.

The desk permits the instructor to give a lecture, demonstration or discuss any difficult phase of the experiment during the laboratory period.

With equal ease a demonstration can be stopped by the instructor at any time and the students permitted to follow individual laboratory experiments.

Where the science work of the entire school does not cover the entire period of the school day, the desk can be used as a regular classroom desk. This avoids vacant rooms and helps to cut down the cost per room in new buildings.

USED IN THE LINCOLN SCHOOL

These desks are used in the Lincoln School of Teachers College, New York City, New York; University High Schools at Ann Arbor and Iowa City, and in other prominent schools, where the highest educational standards are desired.

Before you make plans for future laboratory equipment, write for the new Kewaunee Book. It will be sent free and prepaid to any instructor or official interested in the planning for or purchase of Laboratory Furniture.

Kewaunee Mfg. Co.
LABORATORY FURNITURE EXPERTS

C. G. CAMPBELL, PRES. AND GEN. MGR.
101 Lincoln St., Kewaunee, Wis.

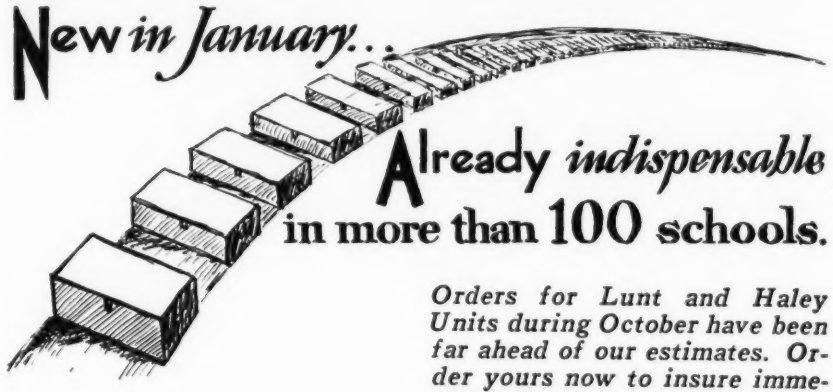
Chicago Office
14 E. Jackson Blvd.

New York Office
70 Fifth Avenue

BRANCH OFFICES

Philadelphia, Greensboro, N. C., Miami, Birmingham, Louisville, Nashville, Columbus, Lansing, Mich., Adrian, Mich., Indianapolis, Jackson, Miss., New Orleans, Houston, El Paso, Toronto, Ont., Oklahoma City, Kansas City, Little Rock, Lincoln, Nebr., Des Moines, Minneapolis, Grand Forks, N. D., Aberdeen, S. D., Denver, Salt Lake City, Phoenix, Los Angeles, San Francisco, Portland, Ore., Spokane, Crystal Falls, Mich., Montreal, Que.

New in January...



Already *indispensable* in more than 100 schools.

Orders for Lunt and Haley Units during October have been far ahead of our estimates. Order yours now to insure immediate shipment from our present stock.

TWENTY-TWO individual, self-contained, demonstration units for general science are now ready. Each of these units provides *everything* you need to perform from fifteen to twenty unusual experiments covering completely one major topic.

The following units give you a wide latitude of choice and enable you to select just the equipment you need to perform all the demonstrations in your particular general science course:

1. Air and Oxygen
2. Carbon Dioxide
3. Breathing and Ventilation
4. Fuel and Fire Kindling
5. Draft Control and Combustion
6. Fire Prevention and Fire Extinguisher
7. Heat—Expansion and Conduction
8. Convection and Radiation
9. Hydrogen and Composition of Water
10. Ice, Steam, and Boiling Water
11. Density, Purification, and Water Supply
12. Temperature, Air Pressure, and Humidity.
13. Winds and Weather Observation
14. Food, Diet, and Digestion
15. Leaves, Flowers, and Plant Study
17. Yeast, Mold, and Bacteria
19. Constellation and Star Study
21. Magnets and Magnetism
22. Electric Bells and Bell Wiring
23. Cells, Storage Battery, and Electroplating
24. Current Measurement and Control
25. Electric Motor and Power

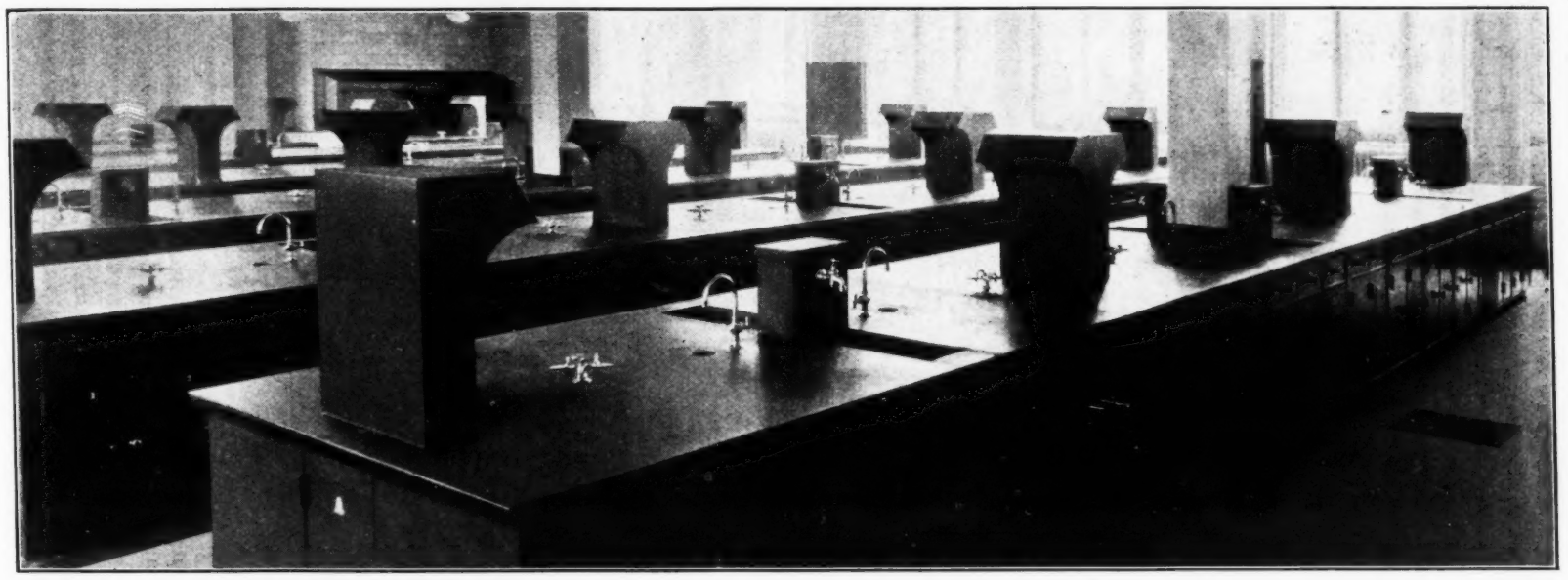
All of these schools using the Unit Plan are enthusiastic about it. It is our conviction that within a few years practically every Junior school in the country will organize its general science equipment on the unit plan. Let us assist you in selecting the units which will exactly fit your needs. Write for a complete list of the experiments and demonstrations provided for in each unit.

L. E. KNOTT APPARATUS COMPANY
Cambridge, Massachusetts

THE LUNT & HALEY UNITS *for* GENERAL SCIENCE

K KNOTT 1895

Room in new Chemical Laboratory, Princeton University



All working surfaces (table-tops, fume-hoods, sinks, shelving, etc.) in the new million and a half dollar Chemical Laboratory at Princeton University are of Alberne Stone.

Thus, the latest and most modern laboratory is insured against costly repairs and depreciation.

Inherently, Alberene Stone is practically acid and moisture-proof, and highly resistant to stain and flames. Joints, tongued and grooved and cemented with acid-proof cement, are permanently gas and air tight.

We are glad to add the new Chemical Laboratory of Princeton University to the already imposing list of important laboratories which are equipped with Alberene Stone.

Alberene Stone Company, 153 West 23rd St., New York City. Quarries and Mills at Schuyler, Va.

ALBERENE STONE *(A product of the State of Virginia)* ***Standard for all laboratory working surfaces.***

(Continued from Page 106)

advancement of the work which must be done are not often adequate for the purpose.

A recent treatise on the subject is the report of the survey of the schools of Newburgh, N. Y., made by Dr. George D. Strayer and his staff of experts, which takes up the matter in some detail. In the study, the offices of the Newburgh schools were rated on a score card for the administration of a school system, which showed that the Newburgh provision scored 310 points out of a possible 1,000. The score, which is a composite of ratings made by a number of investigators, makes it desirable for the board of education and the administrative staff to compare their situation with the standards which formed the basis for the score.

In the matter of division of duties and responsibilities in the central office, the survey staff made a careful study of the duties of the secretary and the assistant secretary in the office of the superintendent of schools in order to determine whether there was loose organization or a lack of coordinated effort on the part of the office workers. A checking list of studies was used, with the result that 35 per cent of the items were noted as being looked after by a particular person. Sixty-five per cent are being performed by one or both of the girl clerks in the office.

The following recommendations gave evidence of the need for an analysis of the work of a central business office and for the establishment of responsibilities in various fields.

All duties connected with the administration office should be definitely assigned to individuals who should be held responsible for the fulfillment of these duties.

An intern research worker should be added to the present staff. He should be given office space, with necessary equipment, on the second floor of the building.

An office containing desks and necessary filing systems should be provided for the supervision of special subjects.

The attendance officer should be in charge of the continuing census, as well as of the attendance duties. His duty is not primarily that of a truant officer, but to see that no child is deprived of the educational opportunities afforded him.

A chief custodian, responsible to the superintendent, should be placed in charge of the buildings and grounds. He should supervise all minor repair-work by the artisans and have general supervision of the janitors.

SCHOOL ADMINISTRATION

Dr. Ralph Yakel, the new superintendent of schools at Jacksonville, Ill., has entered upon a study of the school system he is to manage and will make a report of his findings together with recommendations to the board of education. One of the things he did was to call a meeting of all the janitors and instruct them in their duties. He emphasized the importance of efficient janitorial service, and announced that every janitor is directly responsible to the principal of the school.

—Burlington, Kans.—A kindergarten was established for the first time this year. The instructor gives one-half day to the kindergarten work, and the remainder to work among the backward pupils in the opportunity room.

The enrollment in the high school has been increased to over 300 students. The school has enrolled 95 freshmen for the present year.

—The Teachers' Council of New York City has expressed its opposition to the all-year school. A committee appointed by Superintendent William J. O'Shea has been intrusted with a study of the subject and will make report sometime before the end of the year. The opposition to the plan is based upon the claim that both teachers and pupils require the summer rest.

—The school board of Baltimore, Md., according to Superintendent David A. Weglein, neither encourages nor discourages home study. "Some pupils are more capable than others, and it rests entirely with their parents whether they shall work after school hours," he said. "It is not a matter for the school board to determine."

—The Brooklyn Teachers' Association has undertaken a study of the all-year school as a means of reducing the mounting cost of vacation-school instruction. Because of the rising cost of the summer schools, the demand for the all-year school has become constantly greater. It has been decided to study the plan as it has been carried out in various parts of the country, and the committee will make its preliminary report next spring.

—Mr. J. D. Millar of Dunn county, Wis., has been appointed as a member of the legislative committee which is to make a study of educational conditions in the state. The purpose of the study is to bring the educational problems closer to the people and to simplify and unify the educational system so that it may be more economically operated and may better serve the interests of all the people of the state. The committee consists of six members.

—Alton, Ill. The principals of eight institutions have begun plans for a junior competitive conference for grade-school principals and school officials. The forms of competition will not be limited to athletics, but will include music and dramatics as well. With the organizing of junior conferences in the schools, it is the purpose of the smaller schools to keep competition in both leagues interesting, giving both large and small institutions an even chance to win.

—School children in Evanston, Ill., during the early fall, cooperated with the local garden club in eliminating the tussock moth from shade trees. The school children were asked to destroy as many of the white cocoons as possible, and to inform their parents of the dangers to trees.

—Mr. Stephen A. Park, president of the Milwaukee, Wisconsin school board, advocates the all-year school plan. He believes that the plan is economically and educationally sound.

—The public schools of Nashville, Tenn., opened the fall term with a total enrollment of 22,937, as compared with 21,282 in 1928. The total increase of students was 1,655 over that for the previous year. The total white enrollment was 16,563, an increase of 1,465 over last year. The Hume-Fogg High School led the list of schools, with an increase of 194 students. The Knox School remained the same as last year, with an enrollment of 243 students for both years.

—Oakland, Calif. The school board contemplates the establishment of a summer school for high-school students desiring to graduate in less than four years. It is expected that the summer school will go into effect with the closing of the spring semester. The school will be supplied with a building, but the expenses of instruction will be paid by the tuition fees of the pupils.

—A plan is advanced by Supt. Robinson G. Jones, of Cleveland, Ohio, whereby the school system of that city and the six neighboring suburbs are brought under one unit for the purpose of maintaining a research bureau for the benefit of all. The cost is to be shared in proportion to the size of the several school units.

—Sheboygan, Wis. The school board has taken steps to comply with the new state law governing tuition. The board has decided to collect tuition from the parents or guardians of nonresidents, as in the past, and let them settle the question of the obligation of school districts with the boards in the districts in which they reside.

Look To
KIMBALL—CHICAGO
For Progress in the Manufacture of
LABORATORY - VOCATIONAL
AND
LIBRARY FURNITURE
The Verdict of Architects and Educators
KIMBALL VALUE - SUPERIOR
W. W. KIMBALL COMPANY
Established 1857
Division of Laboratory and Vocational Furniture

A. E. KALTENBRUN
DIRECTOR OF SALES
306 SO. WABASH AVE.
(KIMBALL BLDG.)
CHICAGO

Send Us
Your Plans and
Specifications
for Estimates

EASTERN DISTRIBUTORS
SUPERIOR SEATING CO.
105 W. 40TH STREET
NEW YORK

—Ridgewood, N. J. The eight-four plan of organization has been placed in operation this year.

—Springfield, Oreg. The high school opened this fall, with an enrollment of 180 students. New courses in Spanish and shorthand were introduced this year for the first time.

—The high school at Chatfield, Minn., opened on September 2, with an increase of 20 per cent in enrollment.

—Shorewood, Milwaukee, Wis. The extension of recitation periods was taken up at the recent conference of suburban high-school principals and supervisors held at the Shorewood High School. Because teachers are able to give more individual attention to students in 60-minute periods, the principals were inclined to agree on the rapidly growing movement.

—To aid retired teachers in the state in need of financial assistance, the New York Teachers' Association, through its welfare committee, is raising a fund of $225,000, the income from which will be used in relief work.

An endowment committee has been appointed, and the association has appropriated $7,500 from its funds to finance the work, pending an endowment.

—Roanoke, Va. The school board has adopted a rule for the school year 1929–30, providing that accumulative credit for absence may be allowed up to a possible maximum of thirty days, and that the accumulated days of unused absence shall be added to the ten-day absence allowance of 1929–30. Payment for the accumulative credit over the ten days' absence of 1929–30 will be withheld until the end of the session, and the total cost of the allowance will be limited to $1,500 for the school year 1929–30. The accumulative allowance is applicable only to such teachers as have completed the full school year of 1929–30.

—Mrs. Minnie Pine Brown, a teacher in the schools of Washington C. H., Ohio, for fifty years, has retired from schoolwork. Except for a period of service in Youngstown, Mrs. Brown had done all her teaching in the local school system.

—Miss Annie Epzenberger, the oldest school teacher in Cleveland, Ohio, has retired from the service after completing half a century of teaching. Miss Epzenberger who has reached the age for retirement, will enjoy the benefits of the Ohio teachers' retirement system.

—The New York City teachers' retirement board, at a recent meeting, asked the board of estimate for an appropriation of $8,329,126 for the year 1930, which represents an increase of $1,488,882 over the last year's allowance of $6,640,244.

—Teachers who resign from the New York City schools, and who are subsequently reinstated to their former positions, are to continue to receive the full amount of their salary credit to which their prior service entitles them. The special committee on salary schedules for consideration of the question of reducing the compensation of reinstated teachers has discontinued its work for the present.

—New York, N. Y. The Brooklyn Teachers' Association has unanimously approved a request of the New York Principals' Association that the board of superintendents and the board of estimate provide additional funds in the 1930 budget estimate for alleviating the teacher unemployment situation in the city.

In order to prevent embarrassment to the school authorities in the steps they are taking along the same lines, the committee qualified its recommendations concerning ways and means of providing relief by approving them subject to the approval of the board of superintendents and board of education.

—Lansing, Mich. The city schools opened on September 2, with an initial enrollment of 15,130 pupils. This figure represents a gain of 783 over the enrollment for 1928–29. The largest attendance was in the Pattengill Junior High School, which had 1,373 pupils.

—The school board of Fall River, Mass., has taken favorable action toward insuring the school buildings against fire. No appropriation was made for financing the insurance plan.

—The high school at Portland, Ind., opened the school term in September, with an enrollment of 421 students. The high school is a first-class commissioned school and was erected in 1925, at a cost of $165,000. It is expected that the enrollment for the present school year will reach 500.

In a recent list of 153 distinguished students, compiled by the officials of Purdue University from a student body of 3,900 students, three graduates of the Portland high school were mentioned.

—The Texas state board of education has adopted new rural-school salary schedules which are to be effective under the rural aid law. School trustees in making contracts with teachers will determine the salaries, but the maximum salary to be paid out of state and county funds, will be as follows:

In one-teacher schools $90 a month; two-teacher schools, the principal $100, assistant $80; in three-teacher schools, principal $115, each assistant $80; in the four-teacher schools, the principal $125, primary teacher, $90, other assistants $80; five-teacher schools, principal $135, primary teacher $100, other assistants $85; in six-teacher schools, principal $140, high school assistants $90, primary teacher $100, other assistants $90; in schools of more than six teachers, principal $150, primary $110, other asistants $90; provided that for the school year 1930–31 this schedule shall apply with an increase of $5 a month for each position listed and $2 for additional increase a month for any teacher reemployed in the same position to teach in schools receiving state aid.

—The attorney general of Wisconsin has ruled that absence from the state occasioned by the holding of a teacher's position in another state, does not bar a teacher from classification rights under the teachers' retirement fund, provided the teacher has complied with the provisions of the pension laws making her eligible to a pension.

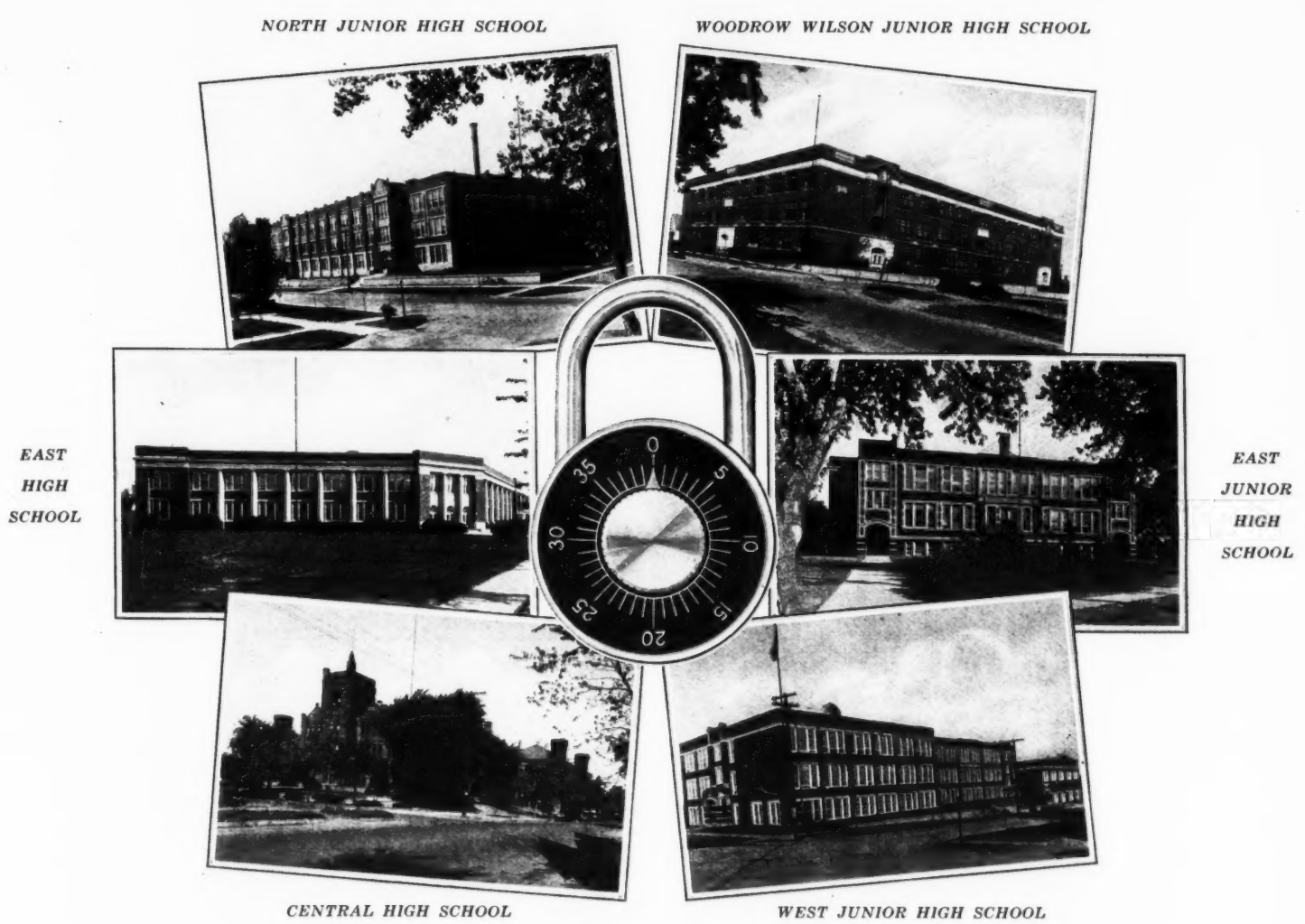
The ruling was given in the case of a teacher who had taught in the state 19 years, and who had made application in 1912 to be allowed to come under the provisions of the original teacher retirement law. Later, she went to North Dakota to teach, where she remained until 1922, when she returned to the state and resumed teaching in Wisconsin.

—The U. S. Bureau of Education has issued a report in which it shows that the average salary of teachers in the one-room schools of Kansas are one half of those paid for elementary teachers in the state having 15,000 or more population. The study included data from 4,475 one-room schools, from village, small and large city school districts, and various types of secondary-school districts. The average salaries for teachers in the elementary and secondary schools of the state decrease with the size of the school.

The bureau finds that the situation, with respect to teachers' salaries in Kansas, is similar to that in a number of states. Individuals are expected to teach small rural schools—admittedly the ones demanding the highest grade teachers—at a much lower salary than city school districts pay for similar service. The result usually is that the best teachers go into the city school systems.

—Pelham, N. Y. The school board has asked the local police department to place a traffic patrolman on duty near the high school to protect the pupils and teachers going to and returning from school.

Sioux City Goes "Dudley" Overnight



DUDLEY SCORES AGAIN

Bitter experiences with key locks prompted the school executives of Sioux City, Iowa, to seek relief from their troublesome locker problem. They were constantly harassed with perennial key troubles, and worst of all, with locker pilfering.

After careful analysis and test, relief was sought through Dudley keyless locks. *An initial order for 5226 Dudley Combination Padlocks and additional orders brought about a wholesale replacement of all key locks.* Sioux City went "Dudley" overnight.

Dudley was chosen because it is a pickproof and foolproof lock that eliminates all locker troubles and guarantees satisfaction.

Are you still laboring under a key lock system? If you are, follow the advice of Sioux City and mail the coupon found below, today.

SIMPLIFIED CONTROL

Efficient yet simple control over your locker system is made possible by our *master chart service*. This chart or control book lists each lock which carries a serial number, and shows its combination and user. It is a simple matter for you to issue any quantity of locks and at the same time keep an accurate check over your locker system.

EASY SELF-FINANCE PLAN

Other schools have adopted Dudley combination locks by taking advantage of our easy self-finance plan. Why not you? This plan enables you to secure Dudley keyless locks for your students without a cent of investment on your part.

Send coupon below for full details and a sample lock for free inspection.

DUDLEY LOCK CORPORATION

DEPT. A-111

26 N. FRANKLIN ST., CHICAGO

DUDLEY LOCK CORP. Dept. A-111
26 N. Franklin, Chicago, Ill.

Kindly send me sample padlock for free inspection and details of self-finance plan.

Name..... Position.....
School.....
Address.....
City..... State.....

No. 2 SOLARS *are safe to use*

of a series

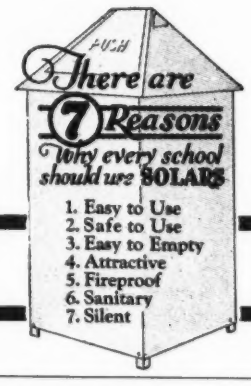
The SOLAR gravity operated cover opens just far enough to admit waste material. It **cannot** close again before the refuse is discarded and the hand removed. Its movement is regulated **entirely** by the normal action of depositing waste material. It is therefore safe for little children to use.

The SOLAR Self-Closing Receptacle is absolutely safe for the smallest child to use. There are no sharp edges to cut or scratch, and there is no mechanism to catch and pinch little fingers.

You drop waste material into a SOLAR as you would into an open waste basket. There are no levers to operate—no springs or weights. The gravity operated cover opens automatically as the hand is placed over the SOLAR. When waste material is deposited, the cover closes again as the hand is withdrawn. It does not spring shut but follows the hand s-l-o-w-l-y. It *cannot* close before the hand is drawn entirely clear of the cover. The SOLAR Self-Closing Receptacle is *safe* for little children.

Write for descriptive literature.

There is only one moving part in the SOLAR Self-Closing Receptacle—the top itself. There are no springs, weights or levers and there is no complicated operating mechanism.



SOLAR-STURGES MFG. CO. MELROSE PARK ILLINOIS

NEW RULES & REGULATIONS

DUTIES OF DIRECTOR OF RESEARCH

The school board of St. Louis, Mo., has adopted rules to govern the duties of the director of reference, research, and publicity. The rules read as follows:

Sec. I. The director of reference, research, and publicity shall investigate and report upon all matters relating to public education that may be referred to him by the board. He shall collect and record such information and data as may be required by the board of education.

Sec. II. At the direction and subject to the approval of the board, the department of reference, research, and publicity shall from time to time, as far as may be feasible, collect and publish such information as may be of interest to the public or further the progress of the schools.

Sec. III. At the direction of the board, the director shall acquaint himself with the policy, organization, and work of the school systems of other cities, and shall report all his findings to the board.

Sec. IV. The director of reference, research, and publicity shall have authority to appoint, subject to the approval of the board, a publicity agent and such assistants and clerks as may be necessary for the proper performance of the duties of his department as such compensation as may be fixed by the board. The publicity agent and such assistants and clerks as may be appointed hereunder shall hold during the pleasure of the director of reference, research, and publicity.

Sec. V. At the direction of the board, the director shall have power to request from time to time from the various executive officers of the board such information as may be necessary for the discharge of the duties assigned to him by the board.

Sec. VI. All previous acts of the board in conflict with the provisions of this rule are hereby repealed.

RULES FOR JANITORS

The school board of Union Beach, N. J., recently adopted new rules governing the work of the school janitors. The rules read as follows:

Sec. 1. All janitors are subject and subordinate to the janitor's committee and the principal, and will be charged with the care, protection, and preservation of the school property during the entire year. They shall act under the direction of the janitor's committee, and shall carry out the directions of the principal during school hours.

Sec. 2. The buildings, grounds, and equipment, including the heating plants, will be under his direct charge, and he will be held responsible for the proper maintenance of the same.

Sec. 3. Janitors will keep the school grounds neat and clean and free from weeds. The sidewalks, paths, fire escapes, and steps must be kept free from snow, rubbish, etc. They must inspect the sanitary closets daily, or as often as may be necessary to keep them entirely clean, and basements in perfect sanitary condition. Bad conditions must be reported immediately to the principal, and if not eliminated within a reasonable amount of time, will be referred immediately to the janitor's committee.

Sec. 4. They must daily sweep thoroughly the schoolrooms, halls, and stairs, and must carefully remove the dust from the furniture and woodwork, having the rooms ready for the teachers and pupils at least thirty minutes before the time for opening the schools.

Sec. 5. They shall mop the floors in all entries, passageways, stairways, and in all rooms occupied for school purposes, as often as is required to keep the same clean, and as often as required by the janitor's committee or the principal. The walls, ceiling, and woodwork must be kept free from dust and the windows cleaned at least every two months, or oftener if necessary. Water must not be poured or spilled on the floors from pails or hose (this applies to wood floors).

Sec. 6. They shall clean the blackboards, chalk troughs, and erasers at least once a week, and shall see that the inkwells are constantly supplied with ink, cleaning them thoroughly as often as required.

Sec. 7. They shall see that each room is supplied with a thermometer hung about 5½ ft. from the floor, away from direct heat, and shall maintain the temperature of the building as nearly as possible at 70 degrees; they shall keep ashes removed from beneath the grate and keep the heating and ventilating apparatus in good condition.

Sec. 8. They shall make any temporary repairs to the building, desks, and furniture.

Sec. 9. They shall at all times be courteous and respectful to teachers and shall perform any reasonable services in the line of their duty upon request. They shall be careful to avoid any familiarities with the pupils, and shall permit no familiarities on the part of the pupils.

Sec. 10. They shall not admit children into the school buildings out of school hours, except those having permission from the teacher, nor other persons except those whose business gives them the right of entrance.

Sec. 11. They shall be held responsible for coal, wood, tools, keys, furniture, and everything pertaining to the school buildings, and for all damages done through their neglect or carelessness.

Sec. 12. They shall see that school buildings are open to the pupils by 8:50 a.m., except on stormy days.

Sec. 13. They shall wash the basement (cement floors) with plain water at least once a week.

Sec. 14. There shall be a janitor in the school buildings at all times during school hours.

Sec. 15. Janitors shall see that the flag is displayed on all days that the schools are in session (except on stormy or rainy days at which time a storm flag shall be displayed) from at least twenty minutes before the opening of the morning session to the close of the afternoon session, and on the following legal holidays: Lincoln's birthday, Washington's birthday, Memorial day, Independence day, Columbus day, Armistice day, and at such other times as the board of education may direct from 8:30 a.m., to sunset.

Sec. 16. Janitors shall see that all doors and windows are locked before leaving the building.

Sec. 17. No janitor shall be employed to do work in or on any school building for a contractor that has been awarded work on such building.

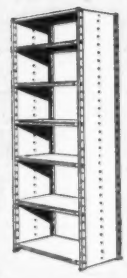
The Minneapolis, Minn., board of education has discovered that undesirable "propaganda" films are being shown in the schools. Superintendent Carroll Reed has been instructed to investigate the subject, and formulate suitable rules designed to regulate the picture entertainments presented.

—Indianapolis, Ind. The state tax board has reduced the city schools tax rate from $1.34 to $1.02 for the school year 1930. It is expected that the new rate will provide a balance of $83,000 in the appropriations at the end of the year.

Recessed for Economy and for appearance

When Lyon Lockers are recessed into the walls of a school they save space, they add trimness to the appearance of the corridor, and they remain in perfect alignment for the life of the building. Upkeep expense is a negligible item . . . . Backing this statement of fact are these features: the structural strength of angle steel frames welded into a rigid one-piece unit; doors that are flanged on all four sides and further protected against warping by special v-shaped reinforcements the full length of the door; extra strong, full loop hinges, securely fastened to keep doors from sagging; a quiet, positive locking device that was exhaustively tested before it was adopted. These are a few of the things that have established the reputation of Lyon Lockers for quality and economy. Let a Lyon representative show you, even to the smallest detail, how Lyon builds lockers to the highest engineering standards. Or write us for Locker Handbook and other literature that illustrates how completely Lyon can serve all your storage requirements.

LYON METAL PRODUCTS, INCORPORATED, *Aurora, Illinois*



STEEL SHELVING FOR THE STOCKROOM

COMFORTABLE FOLDING CHAIRS

LI-FLAT CABINETS FOR MAPS AND DRAWINGS

LYON METAL PRODUCTS

LOCKERS
SHELVING
CABINETS
COUNTERS
FOLDING
TABLES
AND CHAIRS
BASKET RACKS

LYON

STEEL STORAGE EQUIPMENT

HILLYARD'S
DIAMOND FLOOR FINISH
DURABLE
LUSTROUS
TRADE MARK
REG.U.S.PAT.OFF

IT'S HERE!

THE FLOOR FINISH SCHOOL MEN HAVE BEEN ASKING FOR

Diamond Finish gives a sparkling brilliance to the dullest floor.

Extremely tough, Diamond Finish stands the "gaff" much longer than ordinary finishes.

It goes on easily and quickly. And it dries fast. Can be applied over any week end or holiday.

Best of all a Diamond finished floor can be kept beautiful with the very minimum of expense.

Every installation a success, being personally supervised by a trained Hillyard floor expert. Ask for a demonstration.

HILLYARD CHEMICAL CO.
ST. JOSEPH, MO.
COPYRIGHT 1929

HILLYARD CHEM. CO. - ST. JOSEPH, MO.
Gentlemen:

Name.....

School.....

City.....

☐ Desires sample and information on DIAMOND FINISH for School Floors

☐ Desires to have floor engineer call to make demonstration of DIAMOND FINISH

CHICAGO CORRESPONDENCE

The Chicago Tribune of October 12 carried a front-page story to the effect that former Congressman John J. Gorman, prosecutor-in-chief against former Superintendent of Schools William McAndrew, has publicly apologized to Dr. David Saville Muzzey of Columbia University, and has repudiated his charges that Dr. Muzzey's history contains pro-British propaganda.

At the McAndrew trial, Mr. Gorman declared "The Muzzey textbook is utterly unfit to be put into the hands of our school children unless we would have them grow into British subjects." Thereupon, Dr. Muzzey instituted a libel suit against him for $100,000 damages.

In a letter said to be "as complete a retraction as any ever made in a libel matter," Mr. Gorman withdrew his charges.

Mr. Gorman's letter was made a part of the public record in the case, and then, by agreement of the plaintiff and the defense, the case was dismissed.

Not long ago a group of men principals discussed the fact that the schools are becoming femininized. A recent survey at Englewood High School shows that the students themselves apparently are not greatly alarmed. Under the guidance of the high-school newspaper, leading students were sounded out on their preference for men or women teachers. The outcome was about 50–50. Some of the reasons advanced are interesting.

A leading girl athlete prefers the men teachers "because they are fairer to everyone."

A leading boy pupil likes women teachers better "because they are more sympathetic."

Another leader among the girl students reports, "I usually like the women better because they understand girls."

The president of the senior class, a boy, prefers men teachers. He says, "They are more practical. I like teachers who can illustrate what they teach. In sciences, some women read out of a book, but the men teach by way of experience."

The citizens of Chicago have paid no taxes for 1928 or 1929, due to the revaluation of property and its unprecedented delay. This has necessitated borrowing $110,000,000 in order to keep the schools open. The rate of interest on these borrowings varies from 4 per cent to 6 per cent.

The Chicago Public School System has become a mecca. Educators from other lands and from other parts of the United States are visiting the Chicago schools in such numbers that there is scarcely a time when some distinguished educator is not being shown about the city.

Within the past few months, vistors from Australia, Russia, China, and Japan have inspected the Chicago schools and school buildings.

Mr. B. C. Harkness, deputy-commissioner of New South Wales, spent a week of study in Chicago schools last month.

Dr. Mien Woo, secretary to the minister of education in China, studied the Chicago brand of individual instruction fathered by Assistant Superintendent James E. McDade.

Dr. Albert Pinkevitch, president of Moscow University, visited several Chicago secondary schools.

Mr. Komora Komoda, architect for the City of Tokyo, made a careful inspection of several modern school buildings. He is planning the construction of 60 new buildings in Tokyo.

Recent visits by American educators have been made by E. Ruth Pyrtle, president of the N. E. A., William Drew, principal of Mission High School of San Francisco, and Dr. A. E. Winship of Boston, editor of the Journal of Education. Mr. Drew who was returning from Geneva, was interested in the latest senior-high-school buildings and in high-school libraries. He and his daughter visited Foreman Junior High School, and Roosevelt and Schurz senior high schools. Dr. Winship visited several Chicago high schools, and in the customary spirit of his "youthful" enthusiasm declared "Chicago's high schools are nationally famous."

The business department of the Chicago Board of Education has been moved from 650 S. Clark St., to its new quarters in the Steuben Building, at 188 West Randolph St. Floors 15 to 20 inclusive have been taken over by the board of education. The law department has its quarters in the new Foreman Bank Building at Washington and LaSalle Streets. The Educational Department remains at the Kelly Building at 460 South State Street. Eventually, when there is a new administration building, these various departments will get together. As it is now, the departments are scattered at various places throughout the loop.

NEW YORK SCHOOL OFFICIALS URGE STATE-WIDE RADIO LESSONS

The New York State Council of Superintendents, at its recent meeting at Lake Placid, adopted resolutions urging the establishment of a radio broadcasting center as an aid to general education, particularly in literature, history, and science.

It was decided to appoint a special committee to cooperate with the state education department in a study of visual education, and to urge the necessity of including in the next budget the amount needed by the department for promoting visual instruction.

DELIVERY OF SCHOOL SUPPLIES

The Detroit board of education has accepted a delivery schedule, worked out by the division of supplies, whereby each school building in the city will be served on a stated day each month. The schedule has been carefully worked out, taking into account the size of the buildings, the distance from the school headquarters, the type of school, the type of departments to be served in the school, etc.

The schedule is intended not only to serve the schools and to provide supplies when, and as needed, but also to insure the maximum use through the school trucks. The division of supplies adapts the type of loads to the size and type of trucks at work.

COLLEGE WOMEN HELP SELF

The smallest percentage of employed women college students are enrolled in the women's colleges having the highest expenses, and in teachers' college where the expenses are lowest.

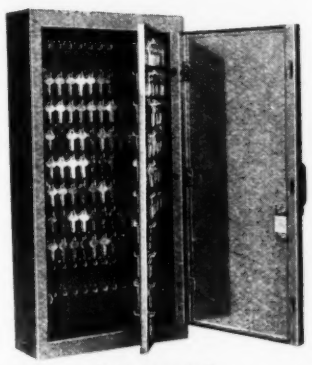
The U. S. Office of Education has recently completed a study showing that one out of every four college women contributes to her own support while attending college. It is noted that the coeducational colleges and universities enroll more than three times as many women who are employed, compared with self-help women in all other institutions. The greatest number of employed college women are working in Illinois, New York, California, Pennsylvania, Maryland, Minnesota, Ohio, and Washington.

The study shows that women earning their entire way in 174 coeducational institutions represent 11 per cent, or 20,252 of the student body of women; of those attending 33 women's colleges only 445, or 2.2 per cent, were earning their entire support; and of the women attending 15 professional schools and colleges 365, or 55 per cent, were entirely self-supporting.

The report shows that a total of 33,856 college women were enrolled in 359 institutions of higher education during the year 1927–28, and that they had a total earning capacity of over $5,000,000.

Let Durabilt Solve Your Storage Problems

With a Complete Line of Lockers, Wardrobe Cabinets, Storage Cabinets, etc.



KEY CABINET
Small—15" wide x 4½" deep x 30" high. Without swinging leaf has 100 hooks. With swinging leaf has 300 hooks. Placing panel on door gives 100 additional hooks.
Large—24" wide x 4½" deep x 30" high. Without swinging leaf has 200 hooks. With swinging leaf has 600 hooks. Placing panel on door gives 200 additional hooks. Each hook will hold five keys. A number is stamped above each hook to correspond with locker numbers on keys. This facilitates the handling of keys.

TOOL LOCKERS
Equipment consists of milling cutter panel with 3½" adjustable pegs, also shelves and drawers for storage.

School executives are frequently confronted with perplexing problems of storage. In hundreds of cases the items and materials to be stored are not of a character which will permit of their being handled in ordinary steel lockers.

Information as to the correct size and type of equipment required to adequately solve these problems is a part of Durabilt service to you.

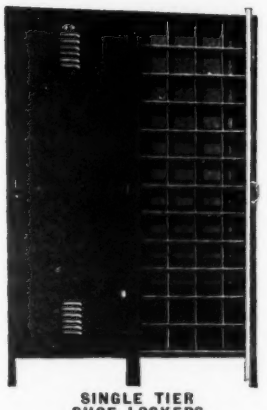
The illustrations shown on this page feature a few of the many Durabilt standardized units and parts which provide satisfactory storage service, both efficiently and economically, for such items as keys, tools, dies, gym clothing, art materials, printing cuts, maps, drawings, screws, bolts, nuts, and in fact, practically anything that is used by pupils or teachers in class rooms, gymnasium, and shop.

In addition to the applications shown here the complete Durabilt line includes steel lockers of every description, steel storage and wardrobe cabinets in hundreds of sizes with interchangeable and adjustable interior equipment. Only Durabilt offers such a complete range in types and sizes of quality storage cabinets.

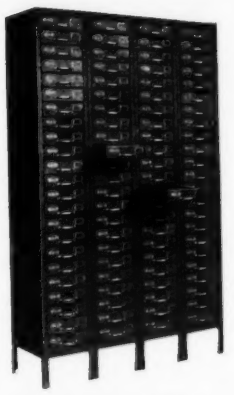
Our broad experience in solving storage problems in schools is always at your command. Let us know of your difficulties and our recommendations will be made without any obligation to you.

Thousands of architects, engineers, superintendents, purchasing agents and others have made use of this valuable service which is also available to you for the asking.

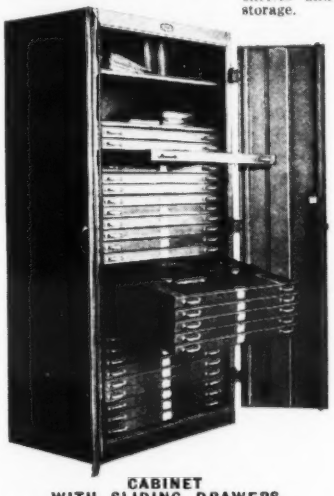
It would be to your advantage to phone our nearest Sales Representative or write us direct at Aurora for complete information on solving your storage problems. Descriptive literature on lockers and cabinets gladly sent on request.



SINGLE TIER SHOE LOCKERS



"DOORLESS" LOCKERS WITH TRAYS
Equipment consists of 19—three inch trays in 60" high and 23—three inch trays in 72" high lockers. Trays are supported by rigid shelves and have special guides on each side which eliminate binding.



CABINET WITH SLIDING DRAWERS
According to your present needs, as many or as few drawers, in a variety of depths, can be placed in a Durabilt cabinet. More can be added later as the demand arises.

A GROUP OF TWO CABINETS
One Doorless, One Double Door for Tools
The illustration shows how a "Doorless" Cabinet and a "Double Door" type can be used side by side providing both closed and open storage for the hundreds of items used in Vocational Schools.

BASKET RACKS
Basket racks may be placed end to end or back to back to form any combination or arrangement desired.

BENCH TOP WITH PEDESTALS
In order to extend complete service to our customers we are prepared to furnish Bench Tops and Bench Pedestals when required, as a necessary part of locker equipment.

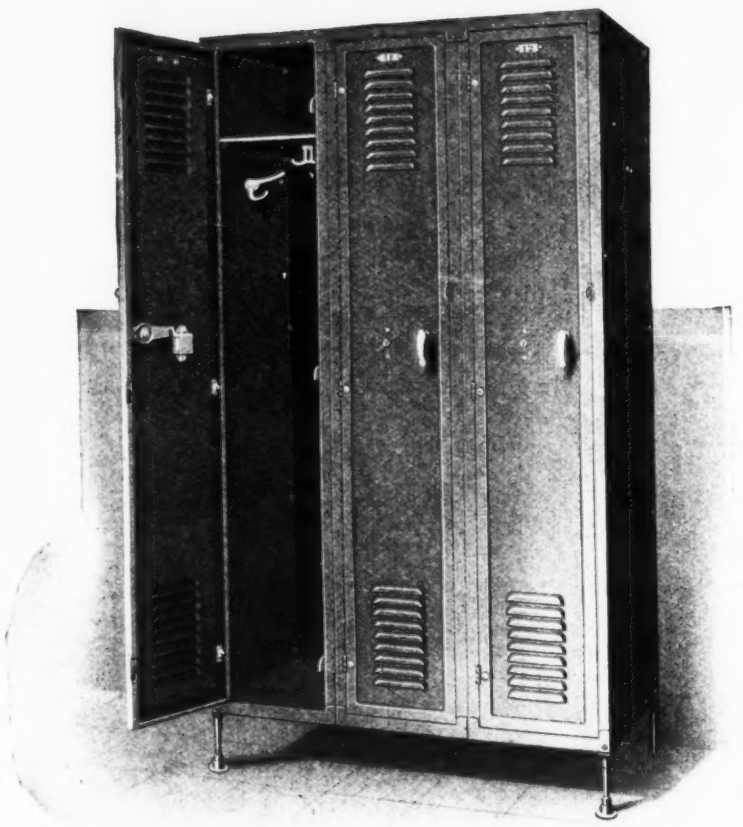
BASKET TRUCKS
All Basket Trucks are Double Row Arrangement. Caster equipment consists of two stationary and two swivel casters.

"No better built than Durabilt"

DURABILT STEEL LOCKER CO.

400 ARNOLD AVE., **Sales Offices in all Principal Cities** AURORA, ILL.

LOCKERS *designed and built to fill every requirement*



Whether you are adding lockers to care for increased enrollment, or planning a complete new installation—Medart steel lockers are ideal for your every locker need.

The Medart advisory service which literally hundreds have found so valuable for many years is at your service. The Medart engineers will be glad to help you plan the most efficient and economical installation possible. This service is at your disposal, and you are not obligated in any way.

The NEW Medart locker catalog contains helpful additions and alterations. Sent free upon request.

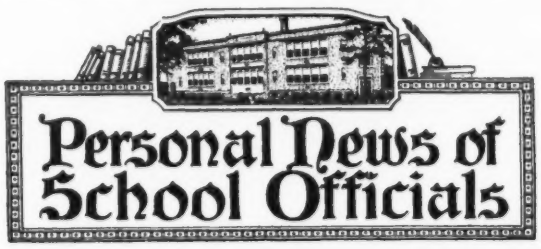
MEDART

Manufacturers Since 1873

Manufacturers of Steel Lockers, Steel Shelving and Steel Cabinets, Gymnasium and Playground Apparatus.

FRED MEDART MANUFACTURING CO.

3530 DeKalb Street **Saint Louis, Mo.**



MR. SCHNEDLER COMPLETES FORTY-TWO YEARS AS SECRETARY OF THE NORA SPRINGS, IOWA, SCHOOL BOARD

Mr. H. F. Schnedler, who recently retired as secretary of the school board of Nora Springs, Iowa, had completed 42 years of consecutive service on the board. Mr. Schnedler's record of service is unique, in that he was appointed in 1887 when little more than a boy. He was reelected annually, and his service was terminated only when the press of business duties forced him to refuse another reelection.

At the time of his appointment in 1887, the school board of Nora Springs consisted of six members, while now there are five members. Only one of the six original members is alive at the present time. Only two women served as school directors during the period of Mr. Schnedler's service.

Speaking of the changes in the schools during his period of service, Mr. Schnedler pointed out that in 1888 the school board voted a levy of $1,300 for the teachers' fund, and $200 for the contingent fund, while this year the board adopted a levy of $18,000 for the general fund, and $2,000 for the school-building fund. In 1887, the school janitors received $12 per month, and now they are paid $115 per month. The superintendent in those days received $65 per month, and now the salary is $300 per month. The average daily attendance in 1888 was 97, and the average cost per month for each pupil was $1.72. At the present time the attendance is 236, and the average cost per month per pupil is $10.55.

In addition to his duties on the school board, Mr. Schnedler had served as mayor of the town for five years, and had been city treasurer for a number of years. At the present time he is president of the local bank of Nora Springs.

—Mr. Carter Blatchford and Mr. L. E. Myers, have recently been appointed as the new members of the Chicago board of education by the mayor. The new members will take the places of Mr. J. L. Coath and Mr. C. J. Vopricka, who had been serving as holdover members since the expiration of their terms.

—Mr. Hugh W. McNamee, secretary and treasurer of the school board of St. Louis, Mo., died at his home on September 20.

—Mr. George W. Sanger has been appointed as acting commissioner of school buildings in St. Louis, to succeed the late Mr. R. M. Milligan.

—The school board of Chatfield, Minn., has been reorganized, with the election of Dr. C. J. Healy as president, Mr. E. P. Harnish as clerk, and Mr. H. P. Thurber as treasurer. There were no changes in membership as a result of the last election.

—Mr. Miles Shepherd, a member of the school board of Cheyenne, Wyo., resigned on September 1, after a service of ten years. Mr. Shepherd was a valued member of the board and was instrumental in the erection of the new junior high school. The building which accommodates 1,150 students, was partially occupied on September 2.

—Dr. R. W. Corwin, a member of the school board of Pueblo, Colo., for the past 27 years, recently passed away at his home in that city. Dr. Corwin had for the past twenty years given a gold medal to the student winning the oration contest. It was largely due to his influence that inclines were built in the Central High School and a trophy hall was established for preserving curios obtained by the Doctor in his world travels. He regularly provided an interesting assembly program through his illustrated lectures.

Dr. William Senger, a nephew, replaces Dr. Corwin on the school board.

—Mrs. Alice Warren O'Dea, on October 16, took over the duties of secretary of the school board of Johnson City, N. Y., succeeding Mr. F. Bates White. Mrs. O'Dea, who is the first woman to hold the office, is a graduate of the Lowell School of Business in Binghamton and has had considerable experience in the railroad office of the vicinity.

—St. Louis, Mo. The position of school publicity agent has been created, with the appointment of Miss Anita Moore. The position carries a salary of $3,000 per annum.

—Mr. J. Q. Cravens has been reelected as secretary of the school board of Excelsior Springs, Miss. Other officers of the board are: Dr. C. S. McKinney, president; Mr. Herbert Hope, vice-president; and Mr. W. L. Bales, treasurer.

—Mrs. Robert Moore has been elected as president of the school board of Wendell, Idaho. Mr. J. B. Hartwell has been reelected as clerk, and Mr. LeRoy Schouweiler as treasurer of the board.

—Mr. A. H. Samson, designer and builder of a number of school buildings at Denver, Colo., died recently at his home in that city. Mr. Samson was the architect for the Ashland and Thatcher Schools, and the auditorium of the Manual Training School, and had contracts for a number of educational institutions.

—Mr. Isaac Baker, a member of the school board of Erie, Pa., for the past 41 years, died at his home in that city after a brief illness. Mr. Baker was the oldest school director in active service in the state and was regular in attendance at meetings of the board.

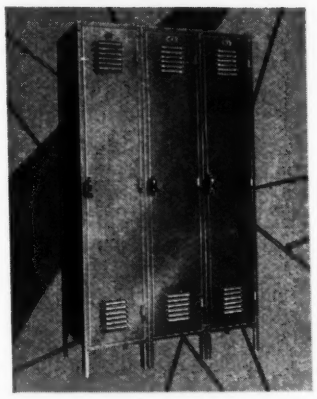
—Mr. Jeremiah Odum, who had been a member of the school board of Granite City, Ill., for the past 24 years, died at his home in that city on September 6. Mr. Odum who was the oldest member of the board in point of service, enjoyed the respect of the community. He had been regularly reelected at the expiration of each term of service.

Mr. E. W. Messinger of Drummond, Wis., has been elected president of the North Wisconsin Teachers' Association, following its two-day meeting at Ashland.

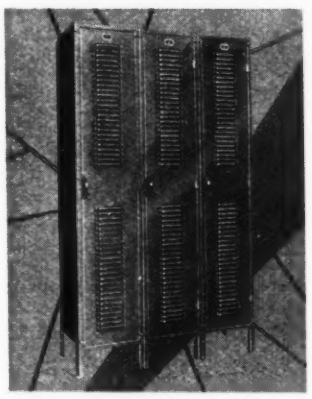
Other officers named were Mr. A. J. Layman of Mason, vice-president; Miss Grace M. Alcorn of Ashland, secretary; and Gustave Zeismer of Ashland, treasurer.

—Mr. Clarence Jensen of Wimbledon, N. Dak., has been elected president of the Stutsman County School Officials' Association. Other officers of the association are: Mr. D. E. Barr, Cleveland, vice-president; Mr. N. A. Williams, Edmunds, secretary.

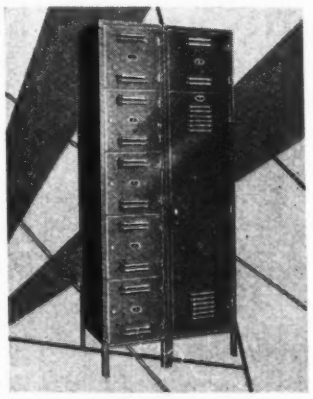
Has Your Registration Exceeded Your Locker Capacity?



Single-tier
standard louver



Single-tier
full louver



Combination
locker

From these six types of school lockers, you can select the ones best suited to your requirements.

After Sales Satisfaction is all BERLOY has to sell.

Lockers that will justify your judgment and your dollars—

Lockers that will withstand the treatment Young America gives them—

Lockers that will be a permanent adjunct to your equipment—

Lockers that will be sold and installed with SERVICE an integral part of the contract. Our nearest Branch or Representative will assist you in selecting the type best suited to your requirements.

Lockers, Filing Cabinets, Storage Cabinets, Desks and Tables, Wire Baskets and Racks for Gym Clothes.

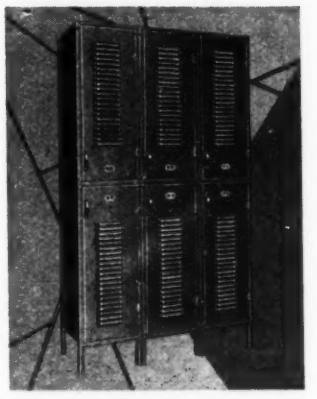
THE BERGER MANUFACTURING CO.
CANTON, OHIO

BRANCHES

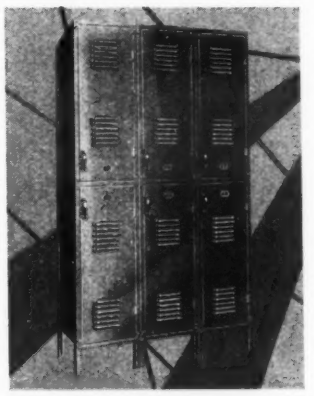
Boston	Dallas	Kansas City	New York	Roanoke
Chicago	Detroit	Los Angeles	Philadelphia	San Francisco
Cleveland	Jacksonville	Minneapolis	Pittsburgh	St. Louis

Export Dept.—Canton, Ohio

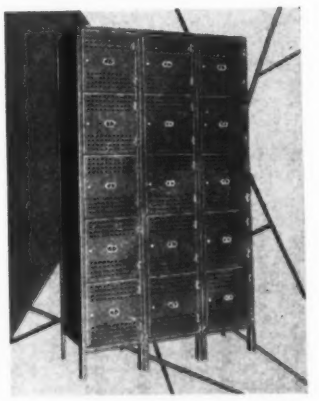
BERLOY



Double-tier
full louver

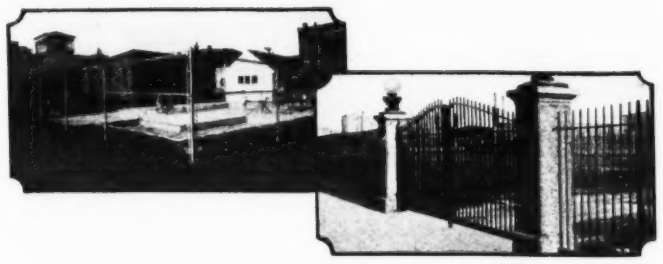


Double-tier
standard louver



Compartment
locker

Whether Iron Picket or Chain Link Wire

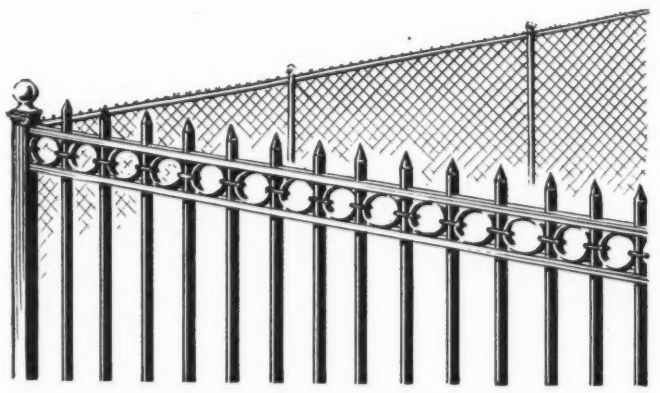


a Stewart FENCE

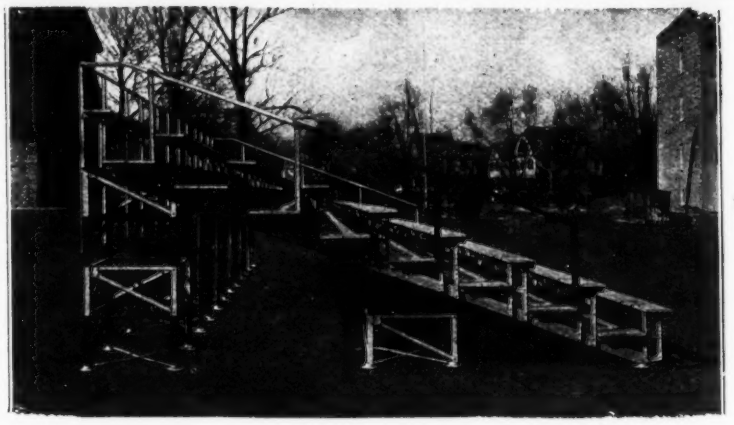
will give you quality which justifies your decided preference. Safety, protection—yes, it provides both in full measure. But what is more it has endurance, years of life and little or no upkeep. You ought to know about Stewart copper-steel and modern structural specifications. **"Ask for a School Fence Catalog."**

THE STEWART IRON WORKS COMPANY, Inc.
505 STEWART BLOCK — CINCINNATI, O.

132



Let a Stewart quotation prove the value we offer



The WAYNE
SAFE STEEL SECTIONAL GRANDSTAND

For the School With a Small Budget for Seats

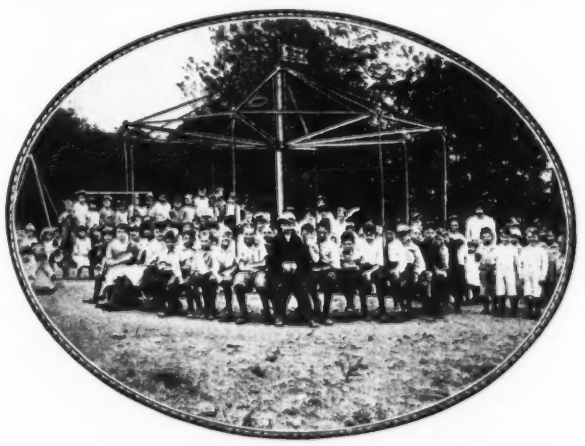
Many schools have added to their original investments in Wayne Stands; for example, one High School has increased its stands three times in seven years.

Write for complete information.

WAYNE IRON WORKS
PEMBROKE AVE., WAYNE, PENNA.
Representatives in Baltimore, Md., Cambridge, Mass., New York, Milwaukee, Wis., Omaha, Nebr., and Pittsburgh, Pa.

MITCHELL
BETTERBILT
Playground Apparatus

Schools – Homes – Parks



Mitchell Whirl!

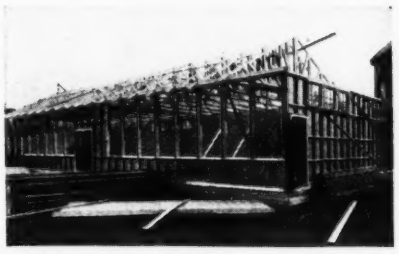
The Mitchell Whirl, shown above, is just one number in the "Betterbilt" line. Send for free illustrated catalog and name of your state distributor.

MITCHELL MFG. CO.
1801 Forest Home Ave. Milwaukee, Wis.

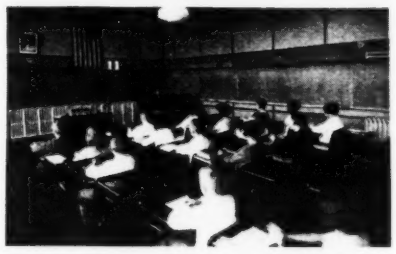
HARRIS UNIT-BUILT SCHOOLS

Safe-Modern-Economical

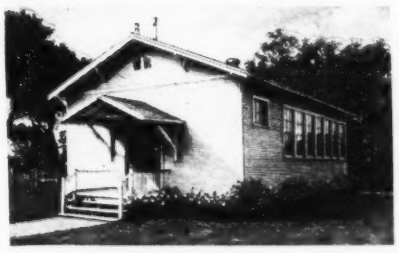
TYPE "A"—All Wood Construction
TYPE "B"—Asbestos Fire Resistant



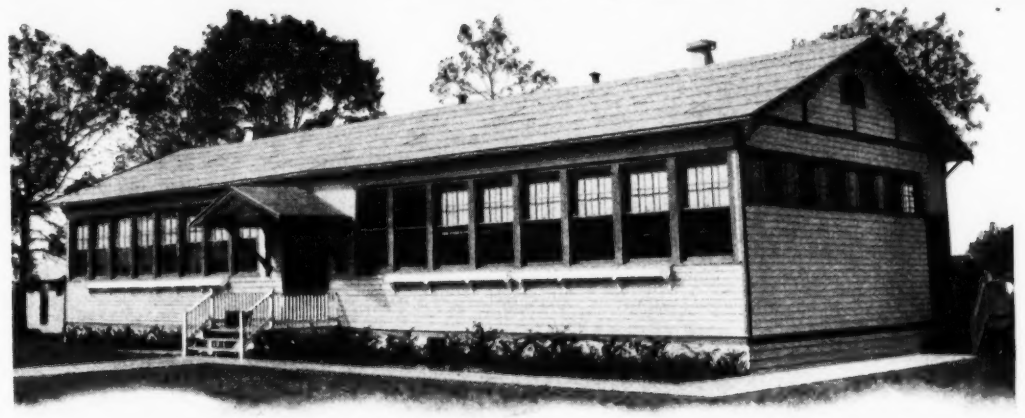
Framed and Braced for Super Strength



Snug, Light and Well Ventilated Classrooms



Schools in All Sizes to Meet Every Community Need



America's Standard in School Housing

Harris Schools are designed and manufactured by America's largest producers of sectional buildings, an organization foremost in the Building and building material industry for over 35 years. Embracing all the requirements of a modern building—proper light distribution, perfect ventilation, sanitation, and safe construction are all an integral part of every Harris School, yet they are low in cost.

Our Standard Designs accommodate 40 to 400 pupils and offer the most satisfactory solution of your housing problem in the most economical way.

FREE BOOK on SCHOOL CONSTRUCTION!

—beautifully illustrated, showing designs and plans of some of the Schools recently erected by Our Experts together with complete Specifications of Materials and Construction of all Harris UNIT-BUILT Schools.

HARRIS BROTHERS CO.

NEW YORK 1349-1525 West 35th Street, CHICAGO, ILL. DETROIT

A CORRECTION AND EXPLANATION

To the Editor:

Since the preparation of the article entitled "Procedure in the Preparation of the Pittsburgh Salary Schedule," which we published in the SCHOOL BOARD JOURNAL for May, 1929, I have learned that Doctor Davidson, superintendent of the Pittsburgh schools presented the report of the Citizens' Committee to the Pittsburgh Teachers' Association, but that the report was not presented for approval or disapproval by them but merely for their information. Consequently, the statement in my article "the recommendations of the Citizens' Committee were adopted by the Pittsburgh Teachers' Association" is in error and what we might say by way of brief paragraph of correction would be that the report of the Citizens' Committee was presented to the Teachers' Association and later was presented to the board of education, who approved it for adoption. The Teachers' Association, before the report of the Citizens' Committee was adopted by the board, sent a strong protest to the board against that portion of the report relating to the percentage of teachers that fell into a given merit class.

Q. A. W. Rohrbach

Pittsburgh, Pa., October 18, 1929.

THE CLASSROOM TEACHER IN EDUCATIONAL RESEARCH

Frederick L. Whitney, Director of the Department of Educational Research, Colorado Teachers' College, Greeley, Colorado

One of the most significant developments in public-school education is the increased part the classroom teacher is taking in city and state administration and supervision, and in the solution of problems of research in American education. The release of energy and genius thus effected is beginning to appear in the speeding up of programs for curriculum construction, for example, in the study of state retirement plans, in the professionalization of supervision, and in the more widespread rise of objective methods of research among teaching problems. Leaders in education have been able, because of this general rise in the level of understanding participation among classroom teachers, to employ more often the surer techniques of scientific research. And the classroom teachers themselves, not only in this national organization but in many state and city systems, have inaugurated and are carrying on many highly important fact-finding and experimental investigations. An analysis of current reports in the educational journals and in the publications of city and state teacher organizations, as well as in the bulletins of city and state research departments will establish this fact.

An analogy to this movement is found in labor. There a significant shift of policy is taking place which is replacing the highly expensive automatic machine with equipment which uses a larger proportion of human muscle and intelligence. This relieves from inventory, capital which may be invested in expansion, including more skillful handling of personnel. Thus necessary changes in variety of product are taken care of and its value is steadily increased.

In somewhat similar manner, supervision in public-school education, is increasingly able slowly to substitute the master teacher for the over-expensive "machine" of minutely organized supervision. Cooperative enterprises like that of the research committee of this Department of Classroom Teachers are pointing the way in this higher level of public-school management and are helping to consolidate progress as it is made.

NEW YORK CITY ADOPTS MERIT PLAN FOR HIGH-SCHOOL PRINCIPALS

The New York City board of superintendents has recently adopted a standard form of application for the position of high-school principal for the guidance of the board in evaluating the records of the various candidates for the five high-school principalships to be filled during the present school year.

The new form, which was prepared by a special committee, consisting of Associate Supts. Harold G. Campbell and John E. Wade, has for its purpose, the segregation of the records of applicants in the fields of education, experience, supervision and contributions to education, so as to make it easy for the superintendents to weigh the applicants' records against one another in any particular field.

A candidate in filling out the application form is required to give his age, home address, telephone number, present position, and school address.

Next, the applicant must indicate the degrees which he has received, the institutions which granted them, the courses for which they were taken, the title of the course studied, the hours consumed, and the date.

Next comes a detailed listing of the candidate's teaching experience in chronological order. This information is subdivided into three sections — day-school experience, evening-school experience, and summer-school experience. The candidate is required to enumerate the schools, their locations, the grades, the subjects taught, the dates of service, and the names of the principals.

In another division, the candidate is to enumerate his experience in supervision and administration in schools, outlining the year, the school, the nature of the duties performed, the number of classes supervised, and the amount of time each week devoted to the supervision.

The blank also calls for the volunteer and extra-curricular work the candidate has done in the schools. In this section, detailed data is required as to dates, the school, the nature of the work, and the approximate time spent in each activity. Private investigations conducted by the candidate are also listed.

The succeeding division of the blank provides space in which the candidate may list any contributions he has made to education, such as the authorship of books. The title, publisher, and place where the book is used must be indicated. Space is given for occasional lectures or addresses. Information regarding the date, title, place, audience, and time spent in each lecture must be given. The third subdivision under contributions calls for educational experiment conducted by the candidate, who must detail the nature of the experiment, its title, by whom it was sanctioned, and the results of the experiment.

Another subdivision allows the candidate to describe devices, syllabuses, methods, and tests he uses, as well as new types of work inaugurated by the applicant.

The last subdivision under contributions permits the applicant to outline any traveling he has done. The date, country, subjects studied, and the time spent, are to be indicated.

The last heading of the new blank is leadership, under which the applicant must list the executive positions in professional or civic bodies or associations which he has held. It calls for the listing of the name of the association, the position held, the candidate's membership number, the nature of the work done, and the time devoted to it.

Conserving the Time of the Small-Town Administrator

A. J. Huggett, Superintendent of Schools, Lake Orion, Michigan

A troublesome problem faced by the small-town administrator, is to so arrange his time that he can do everything he should, and not become an office fixture. Almost always handicapped by lack of sufficient clerical help, he finds himself called upon to do many petty detail jobs which a clerk would ordinarily do. These things have to be done in every school system and yet they take time that should go toward performing the primary function of the superintendent—*supervision.*

The writer has found the office chair the biggest enemy which keeps him from doing a constructive job of supervision. In two positions which he has held he has been called upon to teach about half time. After administrative details and clerical work were taken care of, he found that he had very little time left for visiting classes. The problem was how to get rid of detail work which almost anyone could perform, and which was certainly being done in a most expensive way when a man receiving fifteen dollars per day was performing it.

In each case there was insufficient work for a full-time clerk, nor was the board of education ready to employ a clerical assistant. In each case the problem was solved temporarily by the addition to the payroll of a high-school girl from the commercial department to do many of the small routine tasks. This girl worked in the office two hours every afternoon after her classes for the day were over. For her work she received $10 a month, or about 25 cents an hour.

In the high-school position, which the writer held, it formerly took him from one half to an hour to check over attendance slips each day and to keep the register. It was found that the girl could do this just as well, if not better. This helped a whole lot in relieving him from detail work. The remainder of the girl's time was usually sufficient to care for whatever clerical work needed to be done.

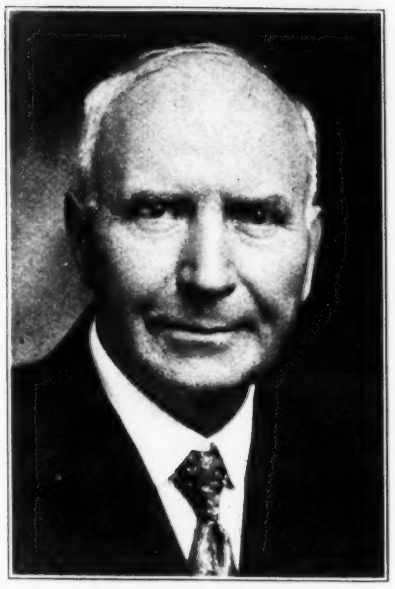
In the writer's present position, the time of the girl has been sufficient usually to care for the correspondence, do what mimeographing the teachers need, etc. Of course, there are limitations to the usefulness of a clerk of this sort. She cannot make out credit slips or do the other work of a record clerk. The superintendent's confidential correspondence must be taken care of personally by him. She can, however, relieve him of a great deal of typewriting and mimeographing that he would have to do otherwise. It is surprising how many details a young girl can look after under intelligent direction.

A plan like the one described can often be made an intermediate step toward the addition of a full-time clerk. After the board has become convinced that it is a waste of time to have the administrator look after the detail work, the members will soon be ready to take the additional step of adding a regular office assistant where one is definitely needed.

It is usually not difficult to convert the board to the advisability of expending the small sum necessary for a part-time girl. Generally about all that is necessary is to prove that the administrator has too much to do, and that it is wasteful for him to be doing many little tasks which could be done as well by cheaper labor. Of course, he must prove that he really is busy and that he is not performing some of his important tasks as they should because of these details. The board will not be willing to relieve him of part of his tasks if the time gained is to be wasted. He should tell the board definitely what he expects to do with the time saved, and then show that he is carrying out the additional work in a valuable way.

If a girl can be found in the junior class who is satisfactory, it is advisable to employ her, as she can then carry on for two years. During the latter part of her term she will naturally be more efficient and it will not be necessary to break in a new girl every year.

(Concluded on Page 140)



H. F. SCHNEDLER,
Nora Springs, Iowa
(See Page 116)

Bus Transportation of Pupils

The advent of the consolidated school, as a partial solution to the rural-school problem has brought into consideration the question of transportation. When a consolidated school supplants a dozen one-room schools, the task of conveying the children living at a distance to and from the schoolhouse must be met.

This has brought into service, as an indispensable factor, the so-called transportation bus. Those who have dealt with the subject, namely with the purchase of busses and the employment of bus drivers, the formulation of regulations as to operation and upkeep have, as the result of experiences gained, evolved definite policies and conclusions.

The subject has been deemed of sufficient importance to prompt comprehensive studies for the benefit of those about to embark in a school transportation project. Such a study has just been made by Morton C. Lindsey, M.A., of New York University, and issued in pamphlet form.

Professor Lindsey holds at the outset of his study that the legal provisions, the administrative unit of control, the standards and specifications of busses, the planning of routes and schedules, the operation and maintenance, the auxiliary uses of busses, forms of contracts, qualifications and duties of drivers, the costs; all these complex relationships in transportation present many problems.

The necessity, therefore, of principles guiding transportation is evident not only for new consolidated school districts, but also for existing consolidated school systems.

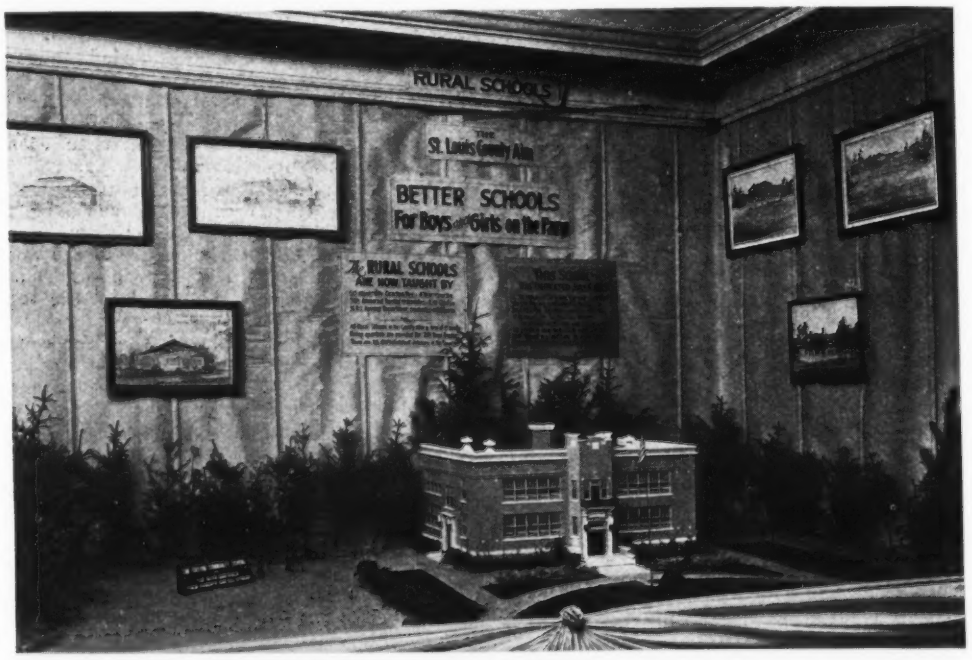
He quotes B. F. Jones, of Massachusetts, who said: "With one exception, no item of school expenditure has grown as rapidly during the past ten years as the item of transporting pupils. This is largely the result of one of the most significant developments in school administration within the past half century, namely, the tendency on the part of the cities and towns to consolidate their schools where circumstances are favorable, and to transport the pupils to such central schools at public expense."

Factors in Transportation

After giving a brief historic outline of the school transportation movement, Professor Lindsey asserts that the transportation of pupils is specifically provided for by law in 43 states. The remaining five, Delaware, Florida, New Mexico, Utah, and Wyoming, permit transportation under the authority granted to school trustees or directors to provide for the general welfare of their districts. It is stated here that, in the main, school districts are corporations created by legislatures and that, therefore, their officers have only such powers as are either expressly granted by the legislature or necessarily implied from those granted.

The question, which school officers must determine at the outset is: What persons are entitled to transportation? They usually have a wide discretion in the matter. The next factor to deal with is that of the distance that must be

(Concluded on Page 122)



A CORNER IN THE ST. LOUIS COUNTY EXHIBIT BUILDING AT THE STATE FAIR WHICH SHOWS A REPLICA OF COUNTY SCHOOL NO. 100, LOCATED AT COTTON, MINNESOTA

The exhibit also shows rather indistinctly pictures of the following community schools in the St. Louis County School District: (a) In the upper left-hand corner, Schools Nos. 6 and 45, and below School No. 94; (b) In the upper right-hand corner, Schools Nos. 135 and 55, and below School No. 147. The reading matter on exhibit, which is also rather indistinct, is as follows:

THE RURAL SCHOOLS ARE NOW TAUGHT BY

50 University Graduates—Four-Year Course
35 High School Training Department Graduates—One-Year Course
Living quarters are provided for 235 rural teachers
265 Advanced Graduates—Two-Year Course
All rural schools in the county have a term of 9 months
There are 50 consolidated schools in the county

THIS SCHOOL WAS DEDICATED JULY 4, 1929

to the memory of the 31 boys from rural St. Louis County who gave their lives to their country at the time of the great World War. Appropriate exercises were held in honor of the 30 Gold Star Mothers.

The old school located one-third mile away has been converted into a duplex as living quarters for the teachers and the family of the principal, on a rental basis. The janitor's family is housed in a remodeled one-room school.

THE ESSENTIAL ELEMENT

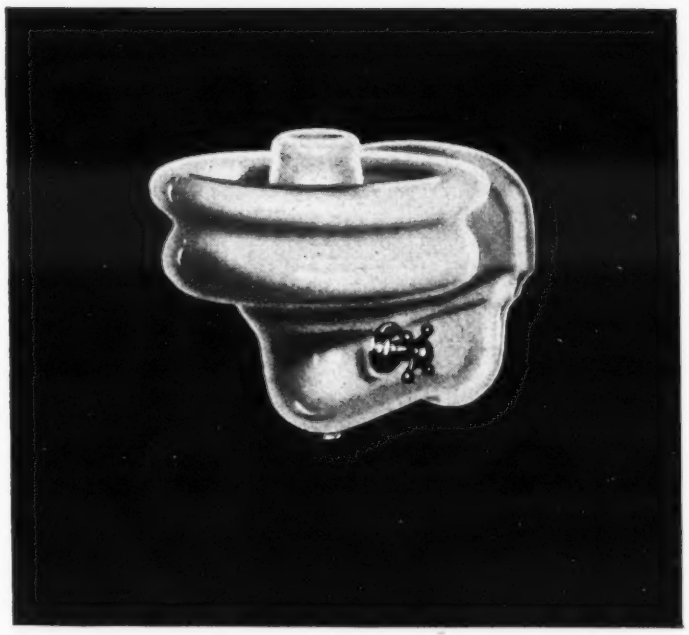
Spend many dollars on water systems . . . many more on purifiers. Then allow water to be consumed from germ-breeding fountains . . . and all has been wasted.

Perhaps worse than wasted . . . for many dread diseases are transmitted by route of the mouth.

Drinking fountains must be properly constructed, if the water they deliver is to be pure. They are an essential point . . . and a most hazardous point . . . in the drinking water system.

Clow fountains are so designed, that no backwash from the user's mouth can stay to hatch possible germs. Clow fountain lips are ever clean, for a film of water flows continuously. No fly can leave filth. No dust can settle.

More than sixty-five styles and sizes of Clow drinking fountains . . . meet every conceivable need of school, factory or public buildings. And these are just a few of the many Clow fixtures, including the Clow Madden Automatic, built especially for school service.

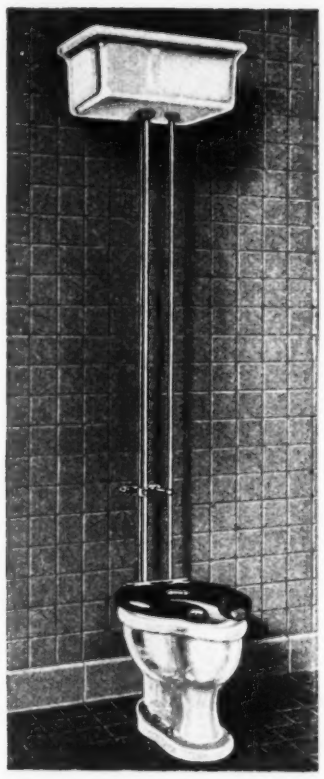


JAMES B. CLOW & SONS, 201-299 N. TALMAN AVE., CHICAGO
Sales offices in principal cities

CLOW

PREFERRED FOR EXACTING PLUMBING SINCE 1878

Lower in Cost in the Long Run—



4783N: Induced syphon closet with vitreous china syphon washdown. Patent automatic seat-operated valve. All exposed brass parts are finished in platinum-like Chromium Plate. A trouble-free "NONCO" Unit.

"PLUMBING NONCO FIXTURES"

First cost is only a single factor in plumbing expense. When repair bills and maintenance expense are added to purchase price, "cheap" plumbing fixtures often become expensive. It's the total cost over a long period of years that determines economy.

"NONCO" plumbing fixtures have long been nationally famous for the many, many years of uninterrupted, trouble-free service which they render.

And the fact that many of the original "NONCO" installations are still functioning without trouble after more than forty-five years of continuous service is ample proof that their reputation is well founded.

The next time you are confronted with a bill for plumbing repairs or replacements, check up! Determine for your own satisfaction whether or not your plumbing dollar goes as far as it should. Investigate "NONCO"!

N. O. NELSON MFG. CO.

Main Office and Display Rooms: St. Louis, Missouri

PIONEER MANUFACTURERS OF PLUMBING FIXTURES FOR SCHOOLS

(Concluded from Page 120)

traveled. It is usually measured from the point where the child leaves a private way and enters upon a traveled highway. As a rule, the laws do not enter into the details, and leave to the school authorities the discretion to work them out in their own way.

Public or Private Ownership

The introduction of a system of pupil transportation involves the question of whether the district, town, or county shall own and operate its own busses or shall let contracts to private parties. In the latter case the contracts are based upon certain amounts per day, per route, or per pupil to be paid to those furnishing the means of transportation. Here the author says: "If the former course is followed, the school must invest funds in vehicles, arrange to house them and keep them in repair, employ drivers, and assume all the responsibilities of investment in and management of a business.

"It may be that the school does not have available the amount of money necessary for the initial outlay; or that transportation is something of an experiment in the particular locality, and the controlling board prefers to try it out for a year or two before adopting it as a regular policy. These and other considerations lead many boards to follow the latter plan and let contracts. In this case the burden of investment and most of the details of management are assumed by the contractor."

Both plans, and combinations of the two are widely used. The choice will depend somewhat on local conditions. The arguments for and against the public ownership and control of a transportation system are recorded as follows:

a) The private plan relieves the school of putting out money in equipment, buying supplies and repairs, and taking care of the many details of the operation.

b) The owner takes better care of his own vehicles than a driver will of publicly owned conveyances.

c) Private control seeks out efficiency to attain profits.

d) Cheaper to school district under private control.

e) Control generally goes with ownership. The superintendent may wish to change the route. Owners are not always willing to meet adjustments.

f) It is sometimes very difficult to find the right kind of a driver to invest his money in a bus.

g) If transportation is let out to a bidder, the incompetent cannot be dismissed easily, and it is more difficult to find another who is willing to risk his money in the undertaking.

h) School ownership usually means better and more comfortable busses since making money is not the object of the school.

i) If properly managed the cost of transportation is generally cheaper under school control.

j) The number of instances of breakdowns and delays is fewer under public ownership. The busses are usually kept in better repair and can be frequently and uniformly inspected.

k) Drivers can be secured more cheaply under school ownership. In many schools the teachers or janitors do the driving of the busses.

l) The method of competitive bidding does not insure the best drivers. It would be as reasonable to hire teachers by letting the instruction out to the lowest bidder.

The tendency throughout the country is toward changing from the private to public ownership.

Types of Transportation

The transportation of pupils is by no means wholly confined to the use of motor-driven busses. In some sections the conditions of the roads are such that the horse-drawn wagon obtains. Again there are sections where the use of trolley lines, railroads, or ferry boats, is employed.

The motor car which is now prevalent in all sections of the country, is of three general types: (1) ordinary five to seven passenger cars, used where but a few pupils are to be transported; (2) a small truck with seats usually on the side, with a capacity of 10 to 24 pupils; finally (3) the large auto school bus with seats down the center and on the sides with a carrying capacity of 40 to 60 children.

The author here adds: "Economy and efficiency dictate generally that motor vehicles be given the preference over horse-drawn vehicles. Units of motor transportation should be purchased with an eye to their durability, economy, and convenience for the pupils. The first depends upon the chassis, the second mainly upon the type of car body. Each car should be adequately equipped and furnished. Safety is of the most importance. Parents should have the confidence that their children are as safe in the school bus as they are in the schoolroom. Nothing in regard for safety should be sacrificed for economy.

"Children should be in transit to and from school not more than one hour each way. A better maximum limit if 45 minutes. They should arrive at the school grounds not more than 15 minutes before opening time (unless other study or home-room periods are provided) and leave promptly when the school closes. Drivers must be required to drive the busses only on prescribed route, and not break time schedules for any reason.

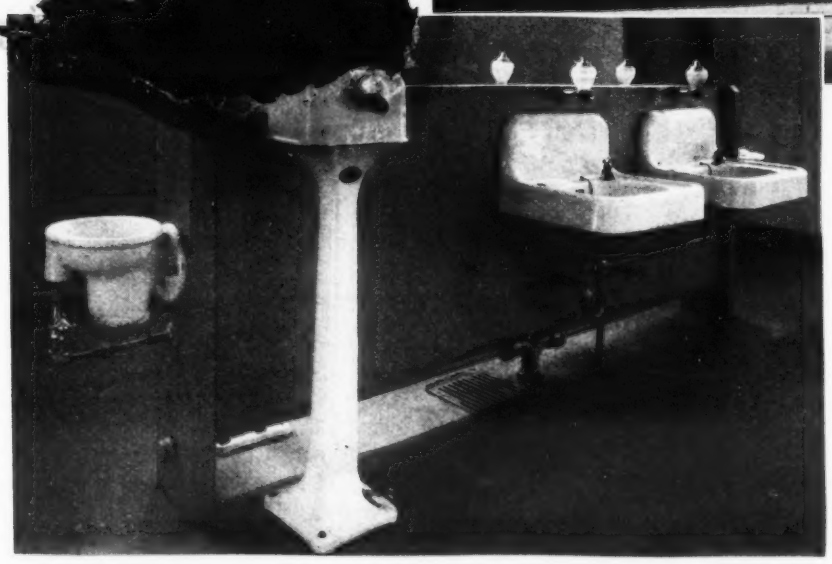
"It is fundamentally right that centralized control with centralized responsibility should be vested in either the superintendent or principal. The operation of the transportation calls for sound business judgment. It is the duty of the administrator to route the territory, prepare the time schedule, purchase vehicle units, and supervise the operation. A careful map of roads and location of homes should be prepared. The principal should then go over the tentative routes, noting the time taken and the conditions of the roads. This gives the basis for the making of the time schedule. A copy of this schedule should be put in the hands of the principal, the teachers, the drivers, and in every home. The time schedule should be rigidly adhered to and strictly enforced."

Another Modern High School

Installs SANI-DRI and Permanent Sanitation

The new High School at El Monte, Calif.—a delightfully modern arrangement of group buildings, sheltered terraces, daylight, sunshine and sanitation. Architect: Edwin C. Thorne, Pasadena, California.

Interior view of an El Monte washroom, showing its efficient arrangement with washbow's and SANI-DRI of a central



the new "SF"

Sani-Dri

"Dries Quicker than a Towel"

A Faster, More Thorough Drying Service Plus Years of Sanitation and Savings

The new "S. F." SANI-DRI offers many advantages to the modern school. Most important, of course, is the healthful, thorough dry, which protects the skin and prevents chapping. All general washroom conditions are improved when SANI-DRI is installed. It eliminates the litter of paper, banishes soiled towels, provides continuous service and an individual dry for each user. Best of all, it offers these and other advantages, while saving 60% to 90% of old-fashioned towel costs.

The new model SANI-DRI (as pictured in the El Monte washroom above) provides a faster, quieter, more efficient drying service than ever attained before. Its twelve improvements, include a new "all-position" swivel nozzle which allows adults or children of any size to dry quickly, comfortably while standing in a natural position. Has an outer case of genuine porcelain enamel and altogether, a quality of construction that you will welcome as "mischief-proof."

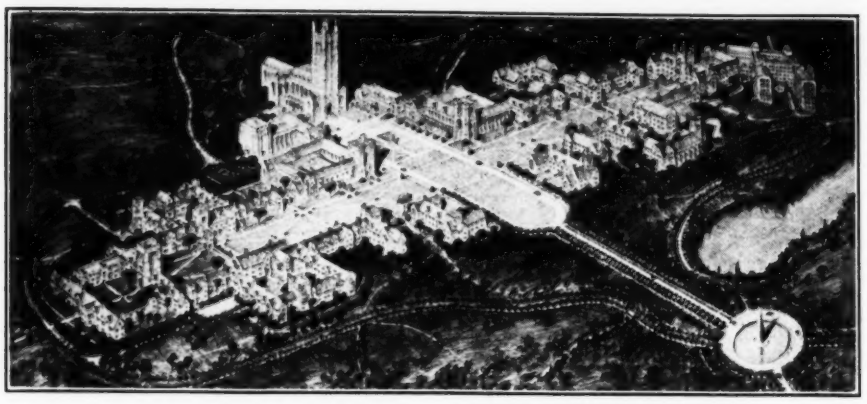
New Booklet Upon Request All of the twelve new improvements are described in this new booklet "12 Points of Perfection." Send your name and address and we will forward a copy at once.

Electrical Division Dept. 11 A

CHICAGO HARDWARE FOUNDRY CO.

North Chicago, Illinois.

THE SPECIFICATION FOR SANITATION

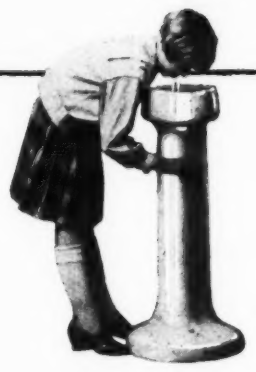


Duke University, Durham, N. C. . . . Horace Trumbauer, Archt.

Write for our School Superintendents' Manual

Specified in leading colleges!

In colleges, too, authorities standardize on Halsey Taylor Drinking Fountains, realizing their value from the viewpoint of sanitation as well as of design. They are as modern as today's structures—promoting and safeguarding the health of students to a degree not possible with any other make or type! Get the facts.



HALSEY TAYL
Drinking Fountains

The Halsey W. Taylor Co., Warren O.
Largest Manufacturers of Drinking Fountains Exclusively

AUTOMATIC STREAM CONTROL
Stream is always at practical drinking height, lips need never touch the two-stream projector!
SAFETY FIRST!

CALIFORNIA SUPERINTENDENTS MEET IN PASADENA

The annual meeting of the city, county, and district superintendents of schools of California, was held at the Huntington Hotel, in Pasadena, from September 30 to October 4. Mr. C. L. McLane, president of the state board of education of California, acted as chairman of the meeting. Addresses of welcome were made by Mrs. Minnie B. Bradford of the California Parent-Teacher Association, by Mr. Roy Cloud of the state teachers' association, and by Mr. Lloyd Lafot of the American Legion department of the state.

The principal address of the first session was given by Mr. Vierling Kersey, state superintendent of public instruction, who spoke on the subject, "Frontiers in California Education." The topic, "The Layman Looks at Education" was discussed by Mrs. Susan M. Dorsey, former superintendent of the Los Angeles schools, by Mr. Harry Baskerville, a member of the Los Angeles board of education, and by Mr. Will C. Wood, state superintendent of banks. The speakers struck the fundamental note, stressing the fact that the citizens and taxpayers were willing to support education so long as the money was spent wisely and in a businesslike manner. It was emphasized that educators must see to it that each dollar spent on education produces one hundred cents in return to the boys and girls of the state.

Other topics taken up at the meeting were "The Improvement of Instruction," "The Educator Looks Ahead," and "Important Current Administrative Responsibilities." Dr. L. B. Rogers, dean of the school of education of the University of Southern California, spoke on "Personnel Control."

The meeting also discussed such topics as "Improving the Rural-School Plant," "Teacher Training," and "Education for Children of Seasonal Laborers." Under the topic of Current Progress, Mr. S. H. Sohn discussed "Recent Educational Legislation in the State"; Mr. W. E. Givens, of Oakland, took up the subject, "California's Professional Standing"; Mr. Arthur Gould, assistant superintendent of the Los Angeles schools, discussed "The Financing of the California Junior High Schools"; Mrs. Madeline Veverka, supervisor of kindergarten and primary work in Los Angeles, talked on "The Creative Principle in Elementary Education"; Dr. L. W. Smith of Berkeley, took up the subject, "The Articulation of Educational Units in the Schools."

The state committee on radio education, of which Mr. W. E. Givens of Oakland is chairman, made its report to the convention. The committee recommended that the state superintendent encourage the state schools to participate in the two educational programs being broadcasted each Thursday morning and Monday afternoon. The committee was of the opinion that these educational programs are helpful in supplementing the work being done in the schools.

One of the important topics discussed at the meeting was the status of educational legislation, taking up particularly (1) The financing of education in the state, (2) state printing of textbooks, (3) administrative units in education, (4) tenure of position, and (5) retirement of teachers.

In a study of the financing of education it was recognized that many intricate problems are involved, and that no remedy may be proposed without a study of all the facts. The committee recommended that a special study of financing be made, covering (1) The best sources of revenue, (2) The equitable apportionment and distribution of funds, (3) The simplification of handling the funds, and (4) A study of the pertinent problems involved in the financing of education.

Taking up the problem of state printing of textbooks, it was brought out that the use of state-printed books has not met the individual needs of the various communities. The committee was opposed to the further extension of state printing. The superintendents believe that each community should be permitted to select the books that best meet its needs, rather than have books sent from the state office which will be left on the shelves, while the schools buy books from their own funds to meet the needs of the school system.

Taking up the matter of administrative units in education, the convention favored larger administrative units, and recommended that a survey be made of each county in the state to determine the unit of administration for each county.

The superintendents gave some attention to the problem of tenure, which under the present law, has revealed some faults which are in need of correction at the hands of the legislature. Under the present law, tenure applies alike to all teachers, so that rural teachers are dismissed before they have served long enough to become permanent. It was decided that a study be made of the present tenure law, and that recommendations be presented to the legislature for correcting the present faults.

It was recommended that a thorough study be made of the retirement problem, with recommendations to be presented to the next legislature.

The convention closed with the election of officers for the year.

SCHOOL ADMINISTRATION NEWS

—The school officials of Cleveland, Ohio, have begun a survey to determine the maximum number of pupils that may be successfully taught in a single class. Some doubt has been expressed as to the advisability of limiting a class to thirty pupils. The study will be made by a committee of junior and senior-high-school principals, under the direction of Supt. R. G. Jones and Mr. W. L. Connor of the school research department.

The study will determine whether pupils in the larger classes are happy, mentally and physically, whether their behavior is good, and whether the size of the class has any effect on the pupil's health and behavior. Experimental classes for the committee's study have been established in the junior high schools.

The teachers of the Julia Richmand High School, of New York City, under the direction of Principal M. H. Lucey, have this year begun the work of studying pupils' ratings in the school. The first step in the work will be the formulation of a detailed questionnaire on the standards guiding a teacher in determining the marks.

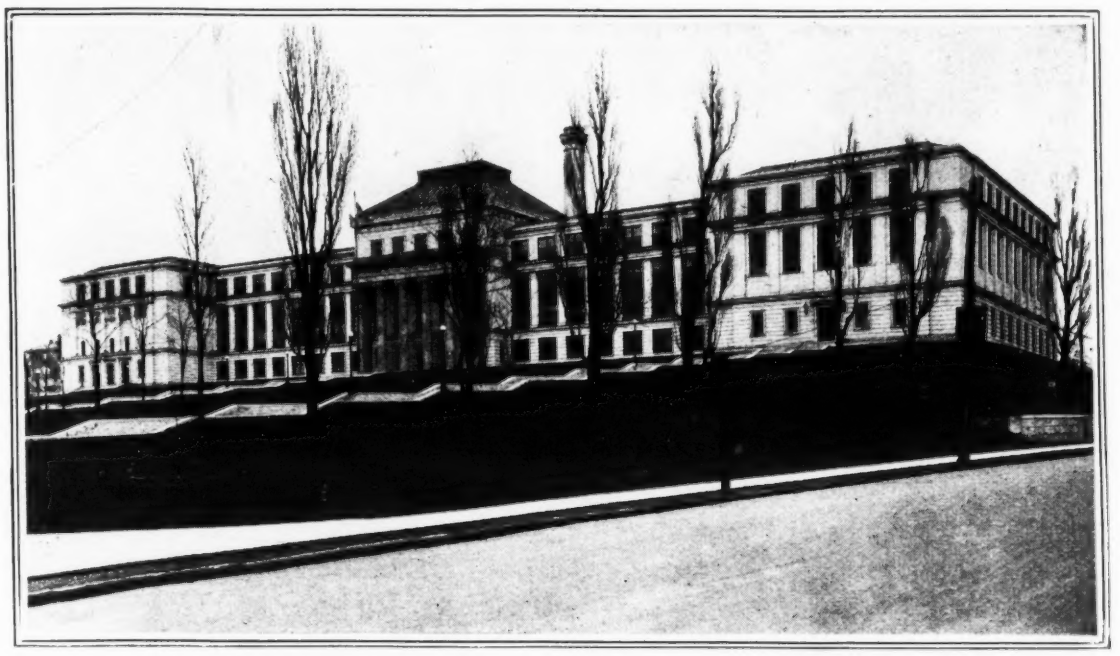
The study is expected to prove useful to the school administrators, since there appears to be a lack of uniformity in grading that may often work to the detriment of pupils.

—The use of the radio as a means of indiscriminate instruction in the schools of Cleveland has won the disfavor of Supt. R. G. Jones. Under a new order of Superintendent Jones, no school in the future may be equipped with radio apparatus without the approval of the school officials. He pointed out that the school is not a place for entertainment. Only lessons which have been carefully prepared for a specific purpose will be approved.

LAW AND LEGISLATION

—Miles Scott was elected a member of the school board of Brownston township, Wayne county, Michigan, on July 8, 1929. When the time arrived to qualify for office he was unable to secure the necessary blank and to file the same. In the meantime the board declared the position vacant and elected Miss Mary Quirk to fill the same. He has not appealed to the courts for reinstatement.

150 Pounds Pressure CRANE VALVES 2500 Pounds Pressure



The Taylor Alldordice High School, Pittsburgh, Pa., is Crane equipped throughout. Architect, Morris Trimble. General Contractor, H. Miller & Sons Co. Plumbing Contractor, Moss & Blakeley Plumbing Co.

Bertrand Russell writes on education

"Character, in so far as it is amenable to education, consists almost entirely of the difference between good and bad habits," writes Bertrand Russell in an article on The Training of Children. One point he stresses in this connection, the force of suggestion.

Feeling that few things play as important a part in forming character as the building of a high regard for personal cleanliness, Crane Co. has long preached this very doctrine. Yet it has not limited itself to preaching alone. In developing its school and plumbing installations, it has attempted to devise fixtures that by their cleanliness, and the dignity of their appearance would furnish the "habit-forming force of suggestion."

Nor has it overlooked the more tangible needs of the school itself. Every fixture and fitting is planned to give a maximum of sturdy service, to require minimum replacements, and to hold maintenance costs at the lowest ebb.

CRANE

GENERAL OFFICES: CRANE BUILDING, 836 S. MICHIGAN AVENUE, CHICAGO
NEW YORK OFFICE: 23 W. 44TH STREET

Branches and Sales Offices in One Hundred and Eighty Cities

Du Pont announces the NEW and improved

DU PONT
REG. U.S. PAT. OFF.

TONTINE

REG. U. S. PAT. OFF.

WASHABLE WINDOW SHADE

which brings you the following important new features:

Increased Weight—

Which gives shades made of the New and Improved TONTINE more "body" without lessening their flexibility.

Smoother Surface—

To which dust and dirt do not cling so readily. Hence shades retain their initial appearance longer, and do not require washing so frequently.

Added Washability—

Because of its smoother surface, the new TONTINE is even more easily washed. An occasional scrubbing with soap, hot water and a brush restores its original appearance.

Greater Beauty—

The smooth, glossy surface of the new and improved TONTINE enhances its beauty enormously.

We will gladly send samples and additional information about the New and Improved TONTINE. Sign and return the coupon below.

E. I. du Pont de Nemours & Co., Inc.
Desk A-6, Newburgh, N. Y.

Please send samples and additional information about the New and Improved du Pont TONTINE.

NAME .....

ADDRESS .....

Central High School, Grand Rapids, Mich.
Architects: Robinson & Campeau, Grand Rapids

another modern high school paints with

BARRELED SUNLIGHT

WALLS, woodwork and ceilings at Grand Rapids' new Central High School are typical of the handsome, well-lighted, lastingly clean interiors made possible by Barreled Sunlight.

The satin-smooth surface of Barreled Sunlight is at once handsome and practical. It has a rich lustre, a pronounced depth peculiar to itself. Its lustrous finish reflects a soft, agreeable light. With no pores to catch and hold the dirt, it remains clean for a long time.

Dirt, smudges, finger marks wipe right off. And when a thorough cleaning finally becomes desirable Barreled Sunlight washes like tile. So durable it may be cleaned repeatedly without wearing away.

Full Gloss, Semi-Gloss and Flat. In cans from ½ pint to 5 gallons, and in 30- and 55-gallon churn-equipped steel drums. For priming, use Barreled Sunlight Undercoat first. See coupon below.

U. S. Gutta Percha Paint Co., 44-K Dudley Street, Providence, R. I. Branches: New York —Chicago—San Francisco. Distributors in all principal cities.

Easily Tinted

Any desired shade is obtained by simply mixing ordinary colors in oil with Barreled Sunlight white —or by using the handy tubes of Barreled Sunlight Tinting Colors, now available in two sizes. Quantities of five gallons or over are tinted to order at the factory without extra charge

U. S. GUTTA PERCHA PAINT CO.
44-K Dudley Street, Providence, R. I.

Please send us your descriptive booklet and a panel painted with Barreled Sunlight. We are interested in the finish checked here.

Gloss ( ) Semi-Gloss ( ) Flat ( )

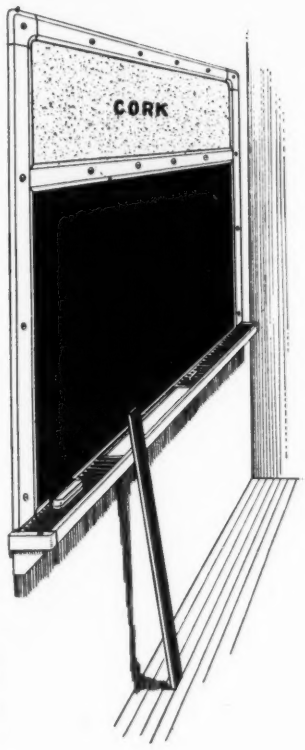
Name_____

Street_____

City_____ State_____

Dudfield's Dustless Crayon Trough

CONSERVE THE HEALTH OF YOUR CHILDREN BY USING THIS SANITARY EQUIPMENT.



An improved equipment for blackboards that insures clean erasers and crayons and prevents permeating the air of the school room with chalk dust. Leading Physicians and Engineers declare that dust is very injurious to health.

Our trough has been on the market for a number of years, is in use in nearly every state in the Union and is giving perfect satisfaction. We have just recently filled orders for eleven schools in Atlanta, Georgia, and have our products specified on several other large Building Programs.

Write us for samples and further information.

UNIVERSITY OF KENTUCKY
LEXINGTON

COLLEGE OF ENGINEERING
OFFICE OF THE DEAN

March
Twenty-eighth
Nineteen-
Twenty-seven

Dudfield Manufacturing Company,
116 West Kansas Street,
Liberty, Missouri.

Gentlemen:

I am asking our Mr. L.S. O'Bannon to give you the details relative to the All Metal Crayon Trough and Metal Blackboard Trim for the blackboard in our Thermal Laboratory.

I have been greatly interested in the fine piece of engineering design that you have given to the builders of this country in the form of the Dudfield Dustless All Metal Crayon Trough and Blackboard Trim.

This Dudfield product is one of the most interesting building details I have seen. It has proven highly satisfactory in the Music Room, the Science Building and the Live Stock Pavilion at the University of Kentucky.

I am,

Very truly yours,
F. Paul Anderson
F. Paul Anderson
Dean

Manufactured by

DUDFIELD MFG. CO.

116 W. KANSAS ST. LIBERTY, MISSOURI.

EMIL BROWN & COMPANY

300 E. Ninth St. Manufacturer for Pacific Coast States Los Angeles, Calif.

THE HIRING OF TEACHERS IN THE SMALL SCHOOL SYSTEMS

(Continued from Page 60)

These latter methods all involve teacher rating, a complicated problem, which has by no means reached its final satisfactory solution. The investigations of Ballou,[6] and more recently of Tiegs,[7] picture city systems of teacher hiring as involving trained staffs, elaborate rating systems, schoolroom observation, and personal interviews by placement experts. It is obviously impossible for small school authorities to carry over such procedures in their entirety, but many of them are suggestive and may be used with good results.

To discover how far the small-town superintendents availed themselves of such methods, the questionnaire contained several questions relative to means of obtaining information about prospective teachers. The attitude of superintendents is expressed in percentages of the total number holding each view.

TABLE III. Superintendent's Attitude Toward Observation of Classroom Work of Prospective Teachers

Superintendents Attitude	Less than 1,000 population	1,000—2,000 population	2,000—5,000 population	Totals
Observes classroom work	.28	.21	.44	.29
Observes when possible..	.19	.37	.37	.24
Does not observe.....	.26	.17	.10	.22
Seldom possible.....	.06	.15	.07	.08
No opportunity.....	.09	.03	.00	.07
Miscellaneous	.11	.06	.02	.09
Total number of schools	256	60	43	359

It is noteworthy that observation increases with the size of the town, but considering the handicaps of the superintendent in the smallest towns, it is surprising that almost half of them "aim to observe" at least. Almost all who made remarks on the question felt that observation was desirable, only two expressing doubt as to its real value in predicting success. It is apparent that observation is desirable even in small towns, but that both time and finances are frequently lacking to make it possible.

Superintendent's Use of Interview in the Selection of Teachers

The interview offers an excellent means of "sizing up" a teacher's personality, as well as obtaining information. The answers received from the questionnaire indicated general appreciation of the fact, but showed that expense, time, and distance frequently forbid this means. As is usual in small-town schools, the procedures indicated are not invariable set rules, but seem rather to be town customs, or personal preferences of the superintendents, also being subject to circumstances to some extent. Thus, the situation is in a state of constant flux, and only the broad general characteristics are significant.

TABLE IV. Extent to Which the Interview is Used by Superintendents

Procedure	0—1,000 population	1,000—2,000 population	2,000—5,000 population	Totals
Interview necessary.....	.28	.30	.37	.30
Necessary except where impossible	.20	.15	.23	.19
Will recommend without interview	.44	.51	.39	.44
Miscellaneous	.08	.04	.01	.07
Number of towns reporting	258	60	43	361

Large schools prefer to interview to a rather greater extent than do small systems. Seventy per cent of the replies made no further comment, but 20 per cent expressed themselves in favor of an interview if circumstances permitted. Only 5 per cent did not favor interviews, believing that correspondence was as satisfactory. It is noticeable that almost half of the schools require an interview if possible, and the comments of many of those who will recommend without interview indicate that their course is more largely a matter of necessity than preference.

In case it is necessary for the teacher to apply in person, city systems generally pay at least part of the expenses; small towns do not. Of 361 schools replying, only 62 ever pay any expenses. Even the 62 do not all represent a policy of paying teachers' interview expenses, as 11 of these cases relate only to the payment of superintendents' expenses when seeking teachers. Only 45 schools have any definite policy, and most of these pay only railroad fare. Hence, in the small school, the teacher generally pays her own expenses if she applies in person.

In such cases as involve an interview, the questionnaire shows that the superintendent functions alone in 251 schools out of 362, and that in 61 additional cases he cooperates with some member or committee of the school board. In 17 cases, all of which are in towns of less than 1,000 population, the board or some member of it interviews. These facts serve further to emphasize the primacy of the superintendent in teacher selection in Minnesota, which we have previously noted.

Use of Records Facilitating Teacher Selection

Many well-organized school systems, particularly those employing a considerable number of teachers, use a merit list which is kept from year to year and from which teachers are appointed in the order of priority. The plan does not seem popular in the small schools of Minnesota, however, as but 47 superintendents even answered the questionnaire on this point,

[6]Ballou, F. W., The Appointment of Teachers, Cambridge Harvard University Press. 1915.
[7]Tieges, E. W., How Shall We Select Our Teachers? American School Board Journal, 70, June, 1925. p. 37.

Of Interest and Value to Every Educator—

SENT FREE!

WHERE shall the cafeteria be located?" "How large should it be?" "What seating arrangement is most successful?" These questions and hosts of others are answered here in concise and readable terms for educators. Floor plans, photographs and data on other schools are contained in this valuable book. It is not a catalog—but a practical work on an important question. We will send it, gladly, upon request. There is no obligation in asking for it.

BOSTON
ATLANTA
CLEVELAND

The John Van Range Co.
EQUIPMENT FOR THE PREPARATION AND SERVING OF FOOD
Cincinnati

DALLAS
WASHINGTON
NEW ORLEANS

DIVISION OF ALBERT PICK-BARTH COMPANY, INC.
General Offices: Oakley, Cincinnati, Ohio

Chicago Sales Office
1200 West 35th Street

Detroit Sales Office
170 East Larned Street

New York Sales Office
38 Cooper Square

although other data was quite complete. Of these, only 26 reported a merit list, and of these, three believe that it "does not function well." Eight dismiss the idea without trial, stating that they do not find a merit list necessary. The general impression gained from the replies is that the superintendents believe that it is not adapted to small systems.

A file of eligible teachers involving no attempt at establishing priority, serves much the same purpose as a merit list and finds much more favor in small schools. Out of 362 schools, 129 keep such a file, 17 do so "to a limited extent" or "during the hiring season," while the remainder kept no list, or did not reply.

Since an eligibility list is not an absolute necessity in school administration, it will presumably be found only in the better organized systems, hence should serve as a rough indication of the degree to which office records are systemized. As might be expected, schools in large towns and state high schools use this device oftener than in small towns and high-school department systems.

Selection of teachers by a teacher-rating scale has received much attention and is in wide use in large schools. Of the 259 superintendents of small schools in Minnesota, who gave data on this point, only 71 used it systematically, while 13 report its use "to some extent," or "not always." Thus only 32 per cent of those reporting, use it at all. Even of these several, who commented on the question indicated confusion of rating scales with "teacher application" or other forms, while 3 report its use as a "self-rating device" for teachers use. Of the 71 affirmative replies, 19 were accompanied by rating blanks. Of these, 12 were either "self-rating" blanks, or were for use in supervision. Hence, it is evident that teacher-rating devices find very little use in Minnesota's small schools as a means of teacher selection. As was to be expected, most of those reporting their use are schools in towns of over 1,000 population, or employing over 25 teachers.

In general, we may say that the use of either "merit lists," "eligibility files," or "teacher-rating scales," is not general in Minnesota schools. It would seem that their utility should be justified by successful use in small-town systems before we assume that they are a necessary part of every well-organized system. Their lack of use may mean either unprofessional superintendents, or inapplicability to the small-town system. Only further research will enable us to tell which is the case.

Certain Minor Factors Concerned in Teacher Employment

The employment of local teachers is a matter in which many small-town superintendents believe usage should differ in large and small towns. Cities generally employ more local than out-of-town teachers, safeguarding entrance into their systems by requiring a period of successful teaching elsewhere before applying at home. Certain characteristics of small towns caused many thoughtful superintendents to doubt the wisdom of employing home teachers there.

Of the 359 superintendents answering the questionnaire 191, or 53 per cent, do not employ local teachers, if they can avoid it. Of these 104, or 29 per cent of the number reporting, have adopted definite rulings against local teachers. Those who employ them number 147, or 41 per cent of the group. Of these, 16 employ them against their own judgment. There are only 16 who recommend hiring local teachers and claim good results. Sixty-nine of the superintendents require local teachers to be of exceptional ability or to have had successful experience elsewhere, or limit them to a small proportion of the teaching staff. Thus, it is evident that the consensus of opinion is against local teachers for small schools.

Of the 362 schools reporting, 557 out of 4,904 teachers, or 11.3 per cent, were local. In the grades, 15.9 per cent were local, but in the high school only 5.0 per cent were. A noticeable characteristic is that local teachers are so evenly distributed, most schools having one or two, and only a few having more than that number. Out of 359 schools, 215 employ one or more local teachers. Larger towns have a greater tendency toward the employment of local teachers, but hedge their employment with more conditions than the smaller schools, where they are generally accepted unconditionally, if at all. The employment of local teachers is probably a matter in which no definite rule is advisable, but where each school must judge what it is best to do, considering the special conditions of the community and the personality of the teacher.

Although but a minor matter, the notification by officials of teachers who are not reelected has been the cause of much adverse criticism. This is often unpleasant and frequently time-consuming and is sometimes omitted. In cases where the board acts mainly on the superintendent's recommendation, which, as we have seen, is almost always the custom, courtesy would seem to require that an unsatisfactory teacher be notified that she is not to be recommended, before the board meeting.

In inquiring into this matter the question was stated "Were the teachers who were not reelected notified before the board meeting that they were not to be recommended?" Thus, the answers show what actually happened in 1924–25, rather than the superintendent's policy. In 253 schools, however, we find that 110 superin-

(Concluded on Page 130)

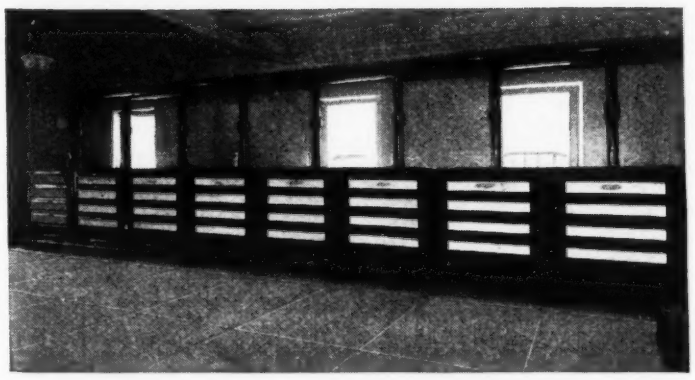
Re-orders *for* VULCAN *Insulated*
GAS BAKE OVENS prove users' satisfaction
with their perfect heat distribution and economical operation

When successes such as the Colonnade Cafeterias, Savarin Restaurants, Woolworth Cafeterias, Manger Hotels, Acker Merrill & Condit, telephone companies, and large institutions such as Pratt Institute, Bellevue and many other hospitals continually re-order VULCAN Insulated Gas Bake Ovens, is that not conclusive proof of their satisfactory experience with them?

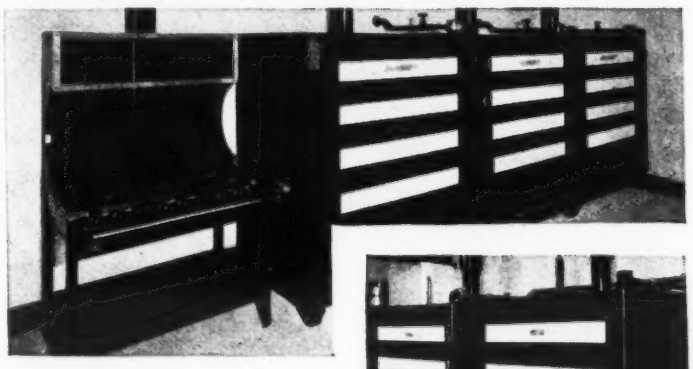
This is the oven with which chefs have been winning prizes year after year at the National Hotel Show...proof of its ability to bake perfectly.

The secret of Vulcan's superior baking qualities is its even heat distribution and its perfect temperature control by automatic heat regulator. Economical operation and cooler bake shops are assured by high quality of insulating material used. Upkeep cost has been reduced to a minimum by heavy substantial construction.

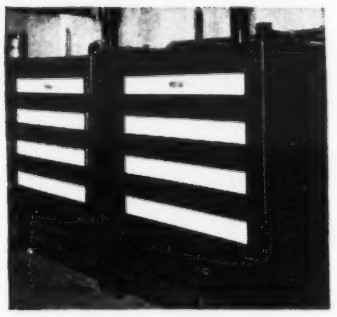
Before installing new ovens or replacing old, it will be to your advantage to look into all the facts about Vulcan. Hotel Department: Standard Gas Equipment Corporation, 18 East 41st Street, New York. Pacific Coast Distributor: Northwest Gas & Electric Equipment Co., Portland, San Francisco, Los Angeles.



Eight Vulcan Insulated Gas Bake Ovens at the New Jersey State Hospital, Trenton, N. J. Ovens can be used singly or in batteries.



Three Vulcan Insulated Gas Bake Ovens and Vulcan Baker's Stove in Pie Kitchen of Whyte's Restaurant, New York City.

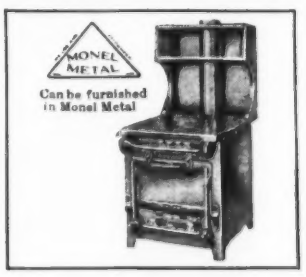


Two Vulcan Insulated Gas Bake Ovens at the St. Regis Hotel, New York City.

Among thousands of users of VULCAN *cooking equipment are:*

Girls' Polytechnic School, Portland, Ore.
Southern University, Scotland, La.
Concord High School, Concord, N. H.

VULCAN GAS HOT TOP RANGES



To School Executives
interested in the serving of Food—

"The Cleveland Line"
of Kitchen and Dining Room Equipment is up to the minute in

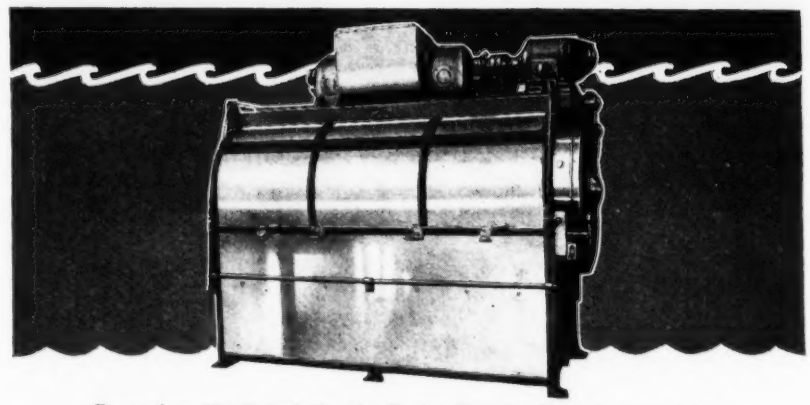
NEW MATERIALS
such as stainless and rustless steels and kindred products

NEW IDEAS
on color treatments, trims and arrangements of equipment.

NEW ITEMS OF EQUIPMENT
such as our new steam cooker—new gas range, counters, steam tables, etc.

Ask for our latest catalog and folders—sent on request to any executive contemplating the purchase of new equipment.

519 HURON RD. *The* CLEVELAND RANGE COMPANY CLEVELAND, O.



Front view, 42 x 90 inch Premier Drying Tumbler, Type A motor drive.

Drying the Premier way lengthens linen life

Drying the Premier way *floats* the goods dry, and so lengthens the life of towels, athletic jerseys, swimming suits, linens and other school washables.

Ask TROY SCHOOL ADVISORY SERVICE for complete information on Premier Drying Tumblers, and other Troy machinery. Also call upon Troy whenever you need competent assistance in planning, laying out and equipping your laundry. No charge . . . no obligation for this service.

TROY LAUNDRY MACHINERY CO., INC.
Chicago - New York City - San Francisco - Seattle - Boston - Los Angeles
JAMES ARMSTRONG & CO., Ltd., European Agents: London, Paris, Amsterdam, Oslo. Factories: East Moline, Ill., U. S. A.

TROY
LAUNDRY MACHINERY
SINCE 1879 . . . THE WORLD'S PIONEER MANUFACTURER OF LAUNDRY MACHINERY

(Concluded from Page 128)

tendents notified teachers, while 104 did not. Thirty-eight afforded no data. Thus, over one half of the officials answering gave previous notice of their intentions.

While there may be some question as to the right of the teacher to know of her failure before reelection, there should be none as to her right to be officially notified after election. The replies show that, of the 359 superintendents answering, 168, or 46 per cent, notified teachers officially. Those who found it unnecessary either because all teachers were reelected or else had been notified before election, numbered 120, or 33 per cent. Only 23, or 6 per cent, failed to notify teachers, while 48, or 14 per cent, afforded no definite data. Thus, the failure to notify, of which teachers so frequently complain, is found in but few schools, another example of the extent to which a few cases of thoughtlessness, or carelessness, can discredit the whole profession.

How, and by whom, the notification is made is also a matter of some interest. It was found that the superintendent notified in nearly three times as many schools as did the clerk of the school board. In general, the superintendent notified almost always in person, while the clerk, with few exceptions, did so by written notice. As might be expected, the superintendent notifies in a larger proportion of state high schools than in high-school department systems.

A minor matter which frequently arouses teachers' curiosity and at times their ire, is that of the final disposition of their photographs and references after election. Only 151 replied to the question covering this point, so only a rough idea of the procedure is possible. Of these, 125 return the photographs and applications if a stamped envelope is inclosed, although 20 of them seem doubtful as to invariable performance. Eight retain the best for future reference, seven will return portraits only if specially requested. Only three destroy all photographs. The applicant is frequently to blame if photographs are not returned, as many fail to write their name and address on the back of the portrait. Where several applications are under consideration at once confusion is likely. Failure to inclose a stamped-addressed envelope is also responsible for many an apparent discourtesy. A busy superintendent cannot be expected to return a large number of photographs, unless it is made easy to do so, nor can he be expected to return them at his own expense.

Characteristics of the Teacher-Hiring Problem in Minnesota

The general picture of the teacher-hiring procedure in Minnesota, reveals two outstanding characteristics.

1. *The primacy of the superintendent.* He performs the essential duties of selection of teachers in nearly all but the most backward or the smallest systems.

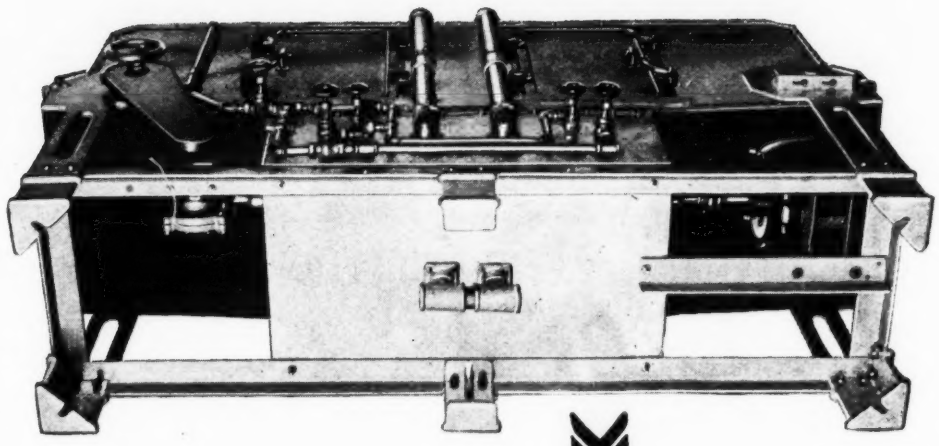
2. *The increasing simplicity of systems of selecting teachers* as we pass from the larger to the smaller schools.

The old-time tendency of school boards to infringe upon the superintendent's executive functions, is, it seems, being rapidly overcome, so far as it relates to the selection of teachers in Minnesota. Thus, improvement in teacher selection depends primarily upon the increased efficiency of the superintendent. This can be brought about by better professional training and higher standards of certification. The well-trained, efficient superintendent is the key to the problem.

The increasing simplicity of system as we pass from the large to the small schools presents another problem: How much system are we justified in dispensing with on the plea that the problem of selection is simpler? Elaborate city systems are, of course, impossible in small schools, but too little system is disastrous. Inadequate funds, local prejudices, lack of assistants, overloading of the superintendent with work, often including classroom teaching, militate against efficient systems. A more intangible factor which has the same effect is the increasing importance of the "personal equation" as we reach the smaller systems. Where but few teachers are in question, each becomes an individual problem which may not fit into a "set" system at all. Many schools cannot set a fixed time for the return of contracts for this reason. Local and married-teacher rules are difficult to enforce consistently.

All these considerations render it necessary to consider the problems of the individual school carefully before determining methods of teacher selection. Research will be necessary to determine the proper system for each school, and education of the board and the constituency may be essential to procure funds and change adverse local customs. Because the superintendent is busy and facilities are limited, the system must be simple. But, because the selection of good teachers is of the utmost importance to the development of the child, the system must be adequate. Each school owes it to the child to determine the system of teacher selection best adapted to its needs, and to make the necessary sacrifice to obtain it.

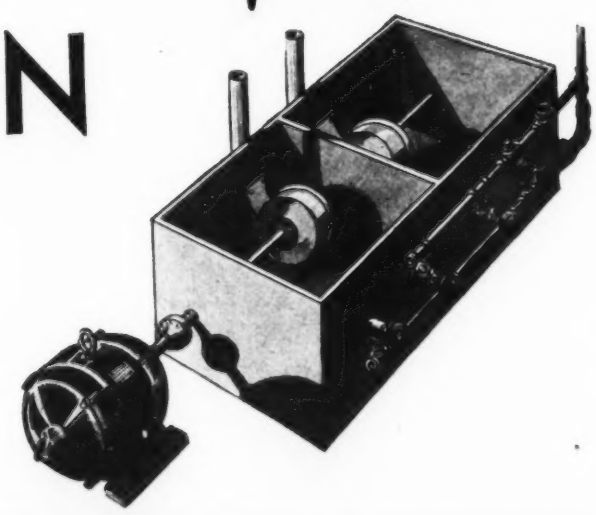
What's at the bottom of it all?



WHY do Champion Dish Washing Machines top all-comers in a "clean-'em-up" contest for modern kitchen efficiency? Well, at the bottom of it all is SATISFACTION — lasting satisfaction — an enduring capacity to meet the needs of any kitchen, big or little — and 24 hours of the day, if necessary. At the bottom of it all, too, is CHAMPION construction — strength, simplicity and easy accessibility of working parts. Facts and figures showing how CHAMPION, in your kitchen, will pay for itself in actual savings, are yours for the asking. Write us right now — while it's on your mind!

The Tank

Champion's Tank is cast in one piece—seamless—rigid. This husky, solid tank makes for a stability impossible in a lighter or welded tank. Further, the inside corners of Champion's Tank are all rounded. Waste food cannot accumulate. Champion's tank is also galvanized, therefore rust proof and easy to keep clean. The Pump shaft is a single rod of Monel Metal running through the tank, making one solid unit of tank and pumps—no inside bearings or connections. What's more, Champion uses an oilless type of bearing—no oiling—no wear—no replacements.



CHAMPION
DISH WASHING MACHINE CO.

HOBOKEN, NEW JERSEY

Showrooms at

1321 BUILDERS' BLDG., CHICAGO

196 LEXINGTON AVENUE, NEW YORK CITY

The Paper Towel

that quickly, pleasantly, and absolutely dries the hands without a second towel being necessary

Tests made in conformity with U.S. Bureau of Standards Circular No. 294 prove that Bay West Mosinee Dubltowls have **73 times quicker absorption** and **4½ times greater strength** than ordinary paper towels.

These qualities mean "one towel" drying and greater satisfaction — important both to the buyer and user. No wonder more and more schools are providing Bay West Mosinee service — the outstanding towel service of America.

For convincing proof of Bay West Mosinee value to your schools, simply mail the coupon.

BAY WEST PAPER COMPANY, Green Bay, Wis.
—A DIVISION OF MOSINEE PAPER MILLS COMPANY

BAY WEST
MOSINEE DUBLTOWLS

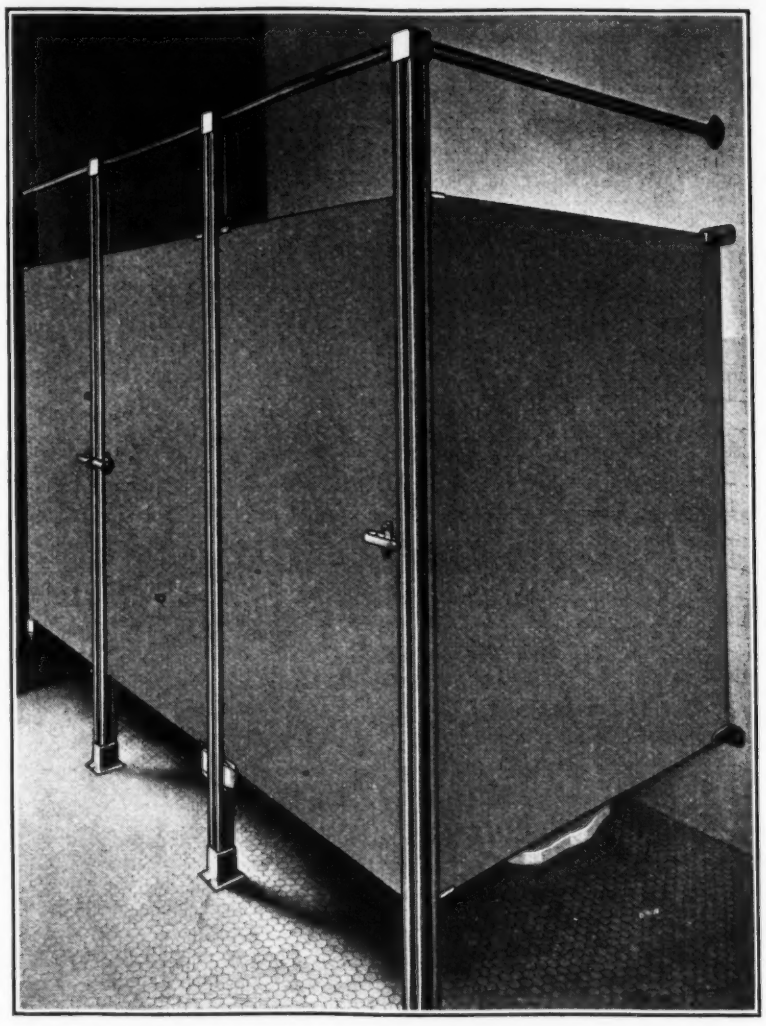
Bay West Paper Company,
Green Bay, Wisconsin

Kindly send facts of interest to schools regarding Dubltowls.
Include free samples—without the slightest obligation.

School or College_____

Individual_____

Address_____



At Temple Beth Israel — New Rochelle, N. Y.

Hygiene BEGINS *In the Toilet Room*

CHILD welfare, dental and medical clinics, gymnasiums, playgrounds, health talks, diet advice—vital as all these enterprises are in modern school programs—after all, doesn't the question of hygiene **begin** in the school toilet room? Eliminate the dingy, rusty, odorous, repellant toilet dungeons of times past. Start the children **right** with sanitary, spic-and-span, wholesome toilet and shower accommodations. Sanymetal Steel Compartments can play a big part in that picture. Let us tell you how.

Sanymetal Products for Schools are: Toilet, shower, Dressing and urinal compartments. Corridor and smoke screens. Metal doors and wainscot. Sanymetal Gravity Hinges. Write for New Catalog No. 30.

The Sanymetal Products Co.
1703 Urbana Road Cleveland, Ohio

Sanymetal
TRADE MARK U.S. REG.
Toilet and Office
PARTITIONS

Oiling— *out of date*
Mopping — *too slow*
Hand Scrubbing — *too costly*

FINNELL-JUST RIGHT
scrubs, waxes and polishes

OLD methods are constantly being dropped in favor of the new; and schools should lead in this movement—whether in teaching methods or floor cleaning methods. To oil floors is unsatisfactory, insanitary, as well as out of date; to mop them requires a great deal of time and leaves the floor streaky and partly cleaned; to have them scrubbed by hand is very expensive.

FINNELL Electric Scrubber Polisher is the modern method of floor maintenance. It's speedy. It's economical. It's quiet. It is an all-purpose machine—scrubs, waxes and polishes, and can be used on any kind of floor. When scrubbing, clean water is supplied for every square inch of floor space—every bit of dirt is chased out, even from tiny cracks and crevices. In waxing, it rubs the wax in thoroughly—leaves no sticky surfaces.

The FINNELL gets floors far cleaner than is ever possible with hand methods and does the work in much less time. Reports from hundreds of schools show that the FINNELL actually pays for itself in labor saved, often in less than a year.

The FINNELL can be used to advantage throughout the whole school building — in the gymnasium, locker room, cafeteria, corridors, class rooms, underneath the chairs and desks.

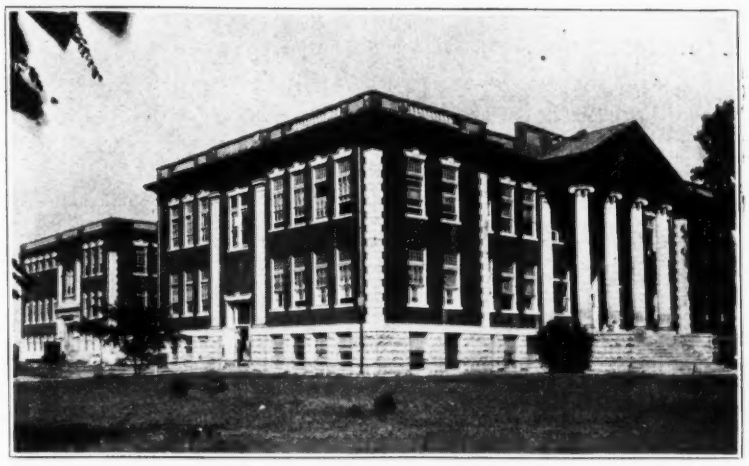
8 models
priced from
$87.50
Up.

There are eight FINNELL Models — a size to meet your needs exactly. A FINNELL engineer will be glad to make a survey and recommend the model you should have. For information write FINNELL SYSTEM, Inc., 811 East Street, Elkhart, Indiana. District offices in principal cities.

FINNELL
ELECTRIC FLOOR MACHINE
It Scrubs -- It Waxes -- It Polishes

The Dunham Differential Vacuum Heating System

provides most agreeable warmth and a full measure of economy for this fine Dewey, Okla., Grade and High School



DEWEY GRADE AND HIGH SCHOOL
DEWEY, OKLAHOMA
Consulting Engineer: Fred J. Sellers, Independence, Kas.
Heating Contractor: Sell Orr Heating Co.

The city of Dewey, Oklahoma, is fortunate indeed in having a fine Grade and High School such as this. It reflects an alert, progressive public spirit that such a structure should be erected for the educational needs of the community. The heating system of the Dewey School is a Dunham Differential Vacuum System. It provides an agreeable warmth, without overheating, in mild weather, and all the heat necessary to thoroughly warm every room during the cold days of winter. Only a Dunham Differential Vacuum Heating System will accomplish this with a fuel saving of 25 to 40%, for no other system of heating utilizes to the fullest extent the economies of Sub-Atmospheric (low temperature) Steam.

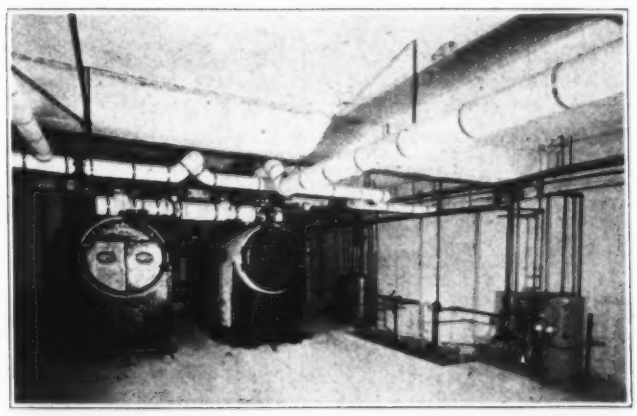
The Dewey Grade and High School has approximately 12,000 sq. ft. of radiation. Two Dunham Vacuum Pumps, installed in the boiler room, are shown in the small illustration.

C. A. DUNHAM CO.,
DUNHAM BUILDING,
450 East Ohio Street, CHICAGO

Over eighty sales offices in the United States, Canada and the United Kingdom bring Dunham Heating Service as close to you as your telephone. Consult your telephone directory for the address of our office in your city. An engineer will counsel with you on any project.

The Dunham Differential Vacuum Heating System and individual parts of the apparatus used in that system are fully protected by United States Patents Nos. 1,727,965, 1,644,114, and 1,706,401, and Canadian Patents Nos. 282,193, 282,194, 282,195. Additional patents in the United States, Canada and foreign countries are now pending.

Look for the name
DUNHAM
This nameplate identifies a genuine Dunham Thermostatic Radiator Trap



Take a "recess" from cleaning worries

FINGER prints and dirty smudges that are difficult to remove from painted surfaces, need no longer be a source of worry. Try Oakite and see how quickly and easily the soiled spots can be cleaned.

A mild solution of this free-rinsing material, applied to paintwork with a cloth or sponge, cleans with scarcely any effort; so thoroughly and effectively that dirt and discolorations disappear as if by magic. No film remains to catch more dust and dirt . . . that is why walls and woodwork washed with Oakite stay clean longer.

Oakite is ideal, too, for washing floors and windows; in school cafeterias for dishes and silverware; for cleaning desks, chairs and other furniture.

Drop us a line now, and ask to have our nearby Service Man call. He has many money-saving cleaning suggestions for you. You assume no obligation, of course.

Manufactured only by
OAKITE PRODUCTS, INC., 26B Thames St., NEW YORK, N. Y.

OAKITE
TRADE MARK REG. U.S. PAT. OFF.
Industrial Cleaning Materials and Methods

Oakite Service Men, cleaning specialists, are located in the leading industrial centers of the United States and Canada.

THE ELEMENTARY-SCHOOL PRINCIPAL AND HIS JOB

(Concluded from Page 58)

TABLE IV

Elementary-School Organization

1. Principal
2. Principal's cabinet
3. Faculty organization
   - *a*) Officers
     - (1) Secretary
     - (2) Treasurer
     - (3) Representative to Teachers' Club
4. Teachers' group organization
   - *a*) Groups
     - (1) Departmental
     - (2) Intermediate
     - (3) Primary
   - *b*) Officers of each group
   - *c*) Duties of each group
5. Pupils' organization
   - *a*) Student council
     - (1) Personnel
     - (2) Duties
   - *b*) Student committees
     - (1) Health
     - (2) Bulletin board
     - (3) Nature study
     - (4) Lost and found
     - (5) Safety
     - (6) Office

Less than half of the principals participating in the study found it convenient to continue under the three types of procedure as outlined.

Twelve principals gave the plan serious consideration and after a fair trial, submitted diaries for five days, the results of which appear in the following table:

The diagnostic value of these results may be summarized as follows:

1. Principals of schools with 30 or more teachers appear to devote a little more time to the improvement of the learning activities than do principals of less than 30 teachers.

2. The internal or intragroup organization is yet incomplete for the delegation of activities, so as to relieve the principal of many of the administrative and routine duties for more effective functioning in the improvement of teaching.

3. The need for interdepartmental coordination, a need recognized by all educators, is not and cannot be met under present conditions.

4. The absence of well-organized and well-planned daily schedules for effective functioning is not in accord with modern theories of administration and supervision of elementary schools.

5. The apparent lack of participation in social-welfare work and professional improvement on the part of elementary-school principals is not consistent with the demands made upon their teaching staff. The query may arise, in lieu of these facts, whether some elementary school principals would make good use of their time were some of his present activities delegated to individuals and groups within the school organization.

6. Last but not least, one might inquire into the feasibility of the plan of many supervisors to interrupt the program of elementary-school principals without first making an analysis of their needs and then making definite plans to meet them.

TABLE V

Percentage Distribution of the Time of Twelve Principals Before and After the Reorganization of the School Program

Principal	Constructive Organization and Administration		Routine Administration		Improvement of the Learning Activities		Imperative, Temporary, or Emergency Problems	
	January	June	January	June	January	June	January	June
1	14.0	21.0	25.0	18.3	4.5	35.4	44.6	25.0
2	25.1	18.2	22.7	18.4	17.0	37.9	31.4	18.0
3	32.0	12.6	37.4	21.7	10.2	52.3	20.3	13.2
4	19.6	15.1	29.4	16.2	30.4	14.2	18.7	54.4
5	10.9	25.6	32.7	24.2	39.7	26.3	15.5	23.2
6	17.3	10.6	27.5	31.4	35.5	17.2	19.6	40.7
7	43.8	11.4	18.4	26.2	28.3	43.6	7.5	18.5
8	37.6	14.3	23.0	22.1	27.6	28.2	9.0	35.5
13	20.4	22.6	47.9	22.6	18.6	13.6	12.4	41.7
14	18.3	10.8	34.1	48.4	29.5	23.6	14.7	16.7
15	28.2	13.6	19.2	36.5	35.6	33.9	16.5	15.9
16	12.5	22.5	32.8	33.8	26.0	33.8	28.5	10.5
All Principals	23.3	16.5	29.2	26.7	25.2	30.0	19.9	26.1

EDUCATIONAL SPECIFICATIONS FOR SCHOOL BUILDINGS—IV

(Continued from Page 61)

- (3) Moving-picture equipment — booth; projector, screen
- (4) Piano: kind
- (5) Orchestra space and equipment—chairs; music stands; storage space for instruments
- (6) Ticket booths
- (7) Special lighting arrangements—footlights, floodlights, spotlights, master control system

Are there any special city ordinances which must be observed or complied with?

27. *Shall There Be One or More Gymnasiums?*
    Regular gymnasiums?
    Corrective gymnasiums?
28. *Shall the Auditorium and Gymnasium Be Combined?*

This suggests the multiple use of rooms. In this connection Mr. William B. Ittner, F. A. I. A., architect, St. Louis, Mo., says, "The only possible method of planning for maximum use of space involves a series of compromises. In other words, the special quarters must be planned so that they can be used successfully for a number of related, although differentiated

(Continued on Page 136)

From Oregon to Massachusetts
PEERVENT UNITS

UNION HIGH SCHOOL MILWAUKEE, ORE.—16 PEERVENT UNITS
CHAFLIN DISTRICT
STATE NORMAL SCHOOL LA GRANDE, ORE.
19-PEERVENT UNITS
LEVI WARREN JR. HIGH SCHOOL NEWTON, MASS.—43 PEERVENT UNITS

F. M. Stokes, Archt.
Hastorf-Lord Co.,
Heat. Contrs.

Charles R. Greco, Archt.
Percy Kenway, Engr.
McClean & Cousens Co.,
Heat. Contrs.

Bennes & Herzog, Archts.
Hastorf-Lord Co., Heat. Contrs.

Ripley & LeBoutillier, Archts.
Buerkel & Co., Engrs.
James S. Cassidy, Heat. Contr.

PREFERRED in school, public and semi-public buildings and department stores, from Coast to Coast not because PeerVent is the oldest unit but because PeerVent Heating and Ventilating Units are more efficient, less expensive and far superior to the central fan system.

Each classroom is independently ventilated although it is possible to control all from a central point. This provides service for each room at a cost proportioned to the useful work done.

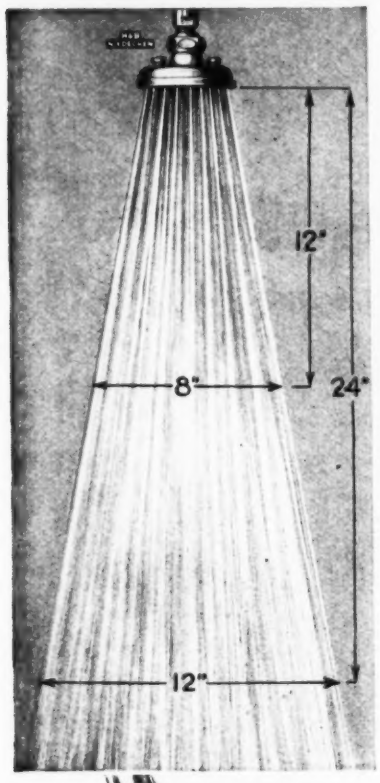
PeerVent thoroughly ventilates without drafts, is absolutely quiet in operation, has no complicated mechanism, eliminates ducts and saves space.

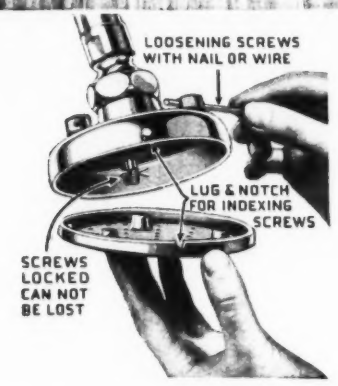
PeerVent Units installed eighteen years ago are still in use and still working efficiently. The improved PeerVent Unit of today is backed by forty years of specialized experience in heating and ventilating.

A book has been prepared for you, fully describing the PeerVent Heating and Ventilating Units. You can get your copy for the asking.

PEERLESS UNIT VENTILATION CO., INC.
Pioneers in Unit Ventilation
Bridgeport, Connecticut
Selling agents in principal cities from Coast to Coast

PEERVENT
Heating and Ventilating Units





AVOID WATER WASTE

Water waste is greatest in school. You owe it to tax payers to specify

NIEDECKEN SHOWERS

to cut down water bills, repair bills and other shower trouble costs. The illustration shows the usual shower spread, but because of the radially drilled *Niedecken* shower face, less water is used.

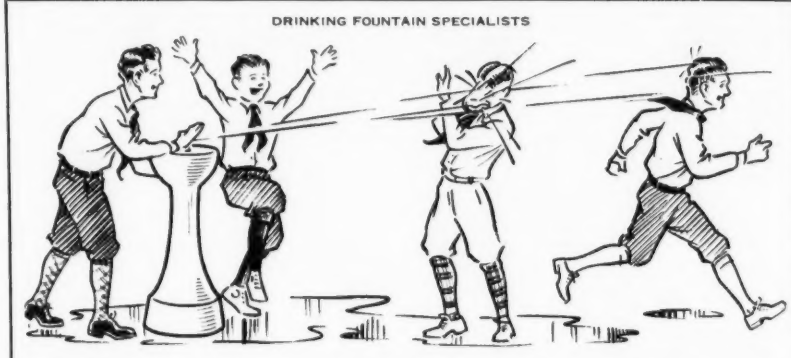
EASY CLEAN FEATURE

For cleaning, the face of the *Niedecken Shower Head* is removed and replaced very easily and securely. The illustration shows the patented *Niedecken* lug and notch feature which guides and facilitates the reassembling.

Write now for bulletin—Niedecken Showers, Shower Stalls and Mixers.

HOFFMANN & BILLINGS MFG. CO.
Milwaukee, Wisconsin.

DRINKING FOUNTAIN SPECIALISTS



There are no "water fights" with CENTURY Fountains

The new CENTURY Bubbler Head prevents "squirting". It automatically regulates the height of the stream, with greater efficiency than any other bubbler head in use. The stream is always of a uniform, convenient and sanitary height, regardless of water pressure up to 150 lbs . . . and the volume of water used is controlled WITHOUT WATER WASTE, reducing drinking water costs to a minimum.

Every school management should have CATALOG "R", which illustrates drinking fountains best suited to school use.

WRITE FOR YOUR COPY.

CENTURY BRASS WORKS, INC.

102 N. Illinois St. Belleville, Illinois

Century SANITARY DRINKING Fountains

(Continued from Page 134)

activities. A gymnasium, if planned with a small stage, may serve auditorium purposes, and if located judiciously may also serve as a lunchroom. One or two laboratories may be used for the differentiated sciences. A shop or two will need to be planned for a variety of vocational activities. A library may be a library, study room, and classroom."

29. *Shall There Be a Shower and Locker Room and Locker Basket Room?*
    In grade schools?
    In high schools?

What special attention should be given to pupil circulation so that these rooms may be used to the best advantage?

30. *Shall There Be Study Rooms?*
    What size?
    How administered?

Shall equipment for multiple use be installed, that is, so the study room may be used for combined study-chorus-orchestra, and other purpose?

31. *Shall There Be a Library? If so, Shall it Be Strictly a School Library or a Public Library?*

If a public library, shall outside entrances be provided so the room may be used at night and on holidays without opening the rest of the building?

Means for complete separation from rest of building?

Means for separate heating?

Separate toilet and lavatory facilities?

What part of equipment shall be furnished by the school board and what part by the library board?

32. *If a Conservatory is Included, How Extensive Shall it Be?*
    For junior high schools?
    For senior high schools?
    Exposure?
    Type of conservatory:
    Large, separate-glass inclosure?
    Small attached-glass-inclosed room?
    Bay window?

33. *Shall There Be a Cafeteria?*

Shall kitchen be a part of the cafeteria or a separate room?

Quarters for help?

Separate lunchroom for teachers with separate equipment?

Storage space and how equipped?

Shall cafeteria be used for other purposes, such as combination lunch-study room, or lunch-chorus room, etc.?

Would you recommend placing the cafeteria on the top floor, or in the basement, or on an intermediate floor?

What will be the comparative cost when placed in different locations?

Is every part of the building above basement of more value for classroom purpose than for a lunchroom?

34. *Swimming Pool?*

If a swimming pool is provided, what provisions for special supervision should be made?

How controlled?

What special rules and regulations for its use:

By pupils?

By outsiders?

Equipment and means for operating, circulation of water, sterilization of water, analysis of water, etc.

Replies from fifteen architects to a questionnaire asking for cost of swimming pool brought the following information:

The cost of construction varies from $22,000 to $70,000, depending upon size, elaborateness, and facilities.

The cost of equipment varies from $9,000 to $35,000, depending upon extent of auxiliary equipment, such as lockers, locker baskets, laundry, equipment, bathing-suit drying apparatus, etc.

The cost of maintenance and operation varies from $3,000 to $20,000 a year, depending upon use, whether limited to pupils or used by community.

35. *Laundry?*

Shall a laundry be included in the building?

What kind of work shall be done?

Shall work be confined to washing the school laundry, and will there be enough of it?

If outside laundry is taken in to provide enough work for the classes, how shall it be limited, handled, and controlled?

36. *What Other Activities Shall Be Provided For?*

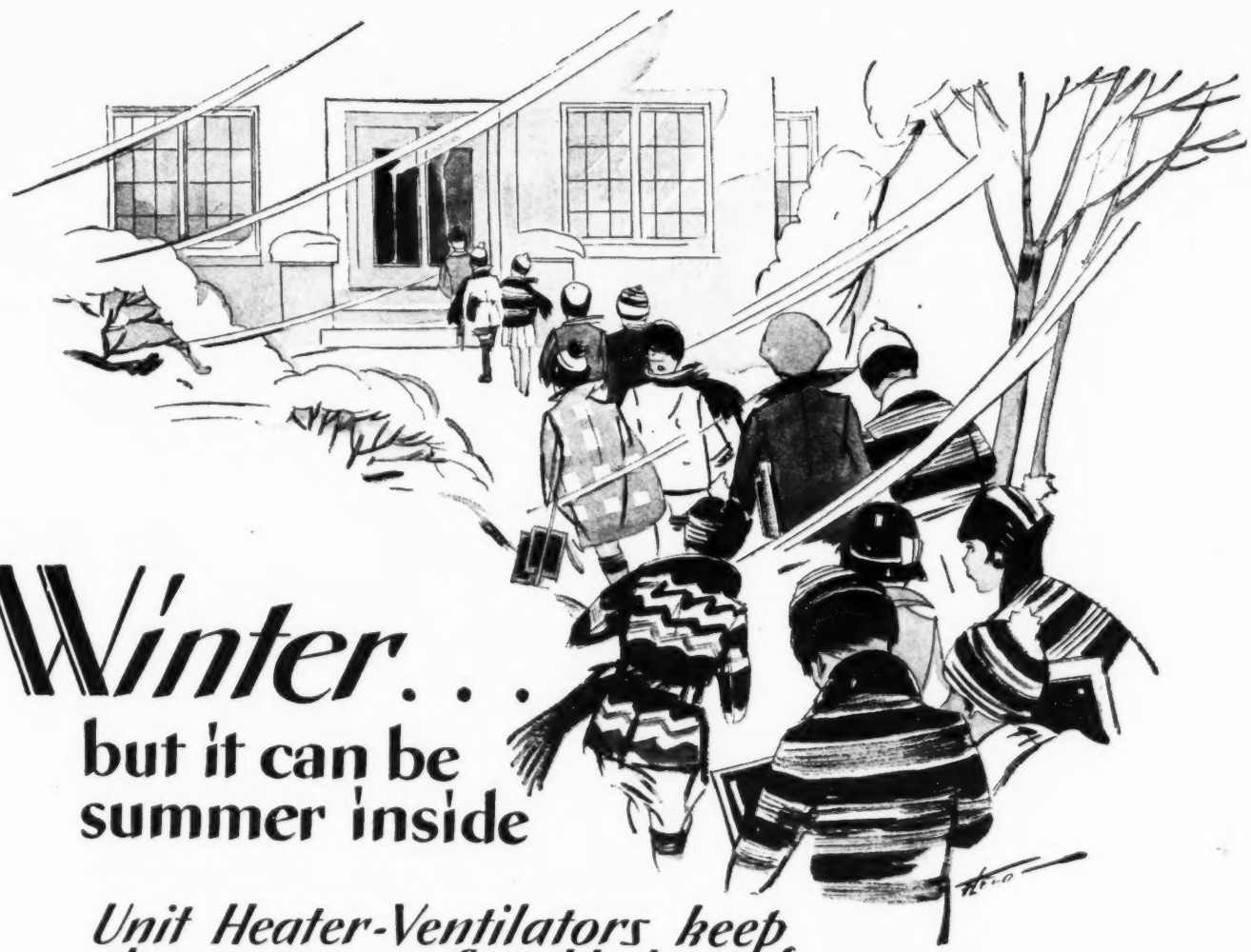
(To be continued)

SOLVE FINANCIAL PROBLEMS

The school board of the Cicero-Stickney High-School Dist. No. 201 of Cicero, Ill., has made arrangements with the Cicero banks for the loan of additional funds to finance the school district until March 1, 1930. The loan is intended to meet a difficult financial situation, due to reassessment troubles and the failure to collect the taxes.

It appears that the delay in collecting last year's taxes has placed Cicero schools and the Morton High School in a financial situation similar to that of other school districts in the county because of reassessment troubles which held up the collection of taxes. Debts legally contracted by the high-school district in addition to two special loans of $700,000, include $844,297 in tax-anticipation warrants, and $587,520 in teachers' certificates, or a total of $2,131,817, exclusive of $859,250 in outstanding bonds.

The debts legally contracted by the grammar-school district prior to the opening of schools in September, amounted to $581,824 in teachers' certificates and tax-anticipation warrants. The loan of $490,000 brings this debt to $1,071,824, to which should be added an outstanding bonded indebtedness of $650,000, of which $200,000 alone is for a new school addition.



Winter . . .
but it can be summer inside

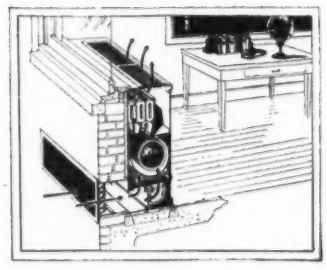
Unit Heater-Ventilators keep classrooms comfortably heated regardless of the weather . . .

Simply raising the temperature in a classroom does not make it a comfortable classroom—nor a healthy one. A red-hot stove will raise room temperature...and the absentee report, too!

Stuffiness, drafts, odors, cold corners—are common conditions in hundreds of schools during the winter months.

But Unit Heater-Ventilators give school children their full share of clean air . . . dust removed . . . warmed to a precise temperature. Sturtevant Unit Heater-Ventilators are to be found in schools . . . old and new . . . from coast to coast.

Many actual photographs of Unit Heater-Ventilators in schools, large and small—in different localities—are found in our Catalog 361. May we send you a copy? Or answer your queries on heating and ventilating subjects?



B. F. STURTEVANT COMPANY

Plants and Offices at: Berkeley, Cal. • Camden, N. J. • Framingham, Mass. Galt, Ontario • Hyde Park, Mass. • Sturtevant, Wis.

Branch Offices at: Atlanta; Birmingham; Boston; Buffalo; Camden; Charlotte; Chicago; Cincinnati; Cleveland; Dallas; Denver; Detroit; Hartford; Indianapolis; Kansas City; Los Angeles; Milwaukee; Minneapolis; Newark; New York; Omaha; Pittsburgh; Portland; Rochester; St. Louis; San Francisco; Seattle; Washington, D. C. • *Canadian Offices at:* Toronto; Montreal and Galt. • *Canadian Representative:* Kipp Kelly, Ltd., Winnipeg.

Also Agents in Principal Foreign Countries

Sturtevant *the Silent* **Unit Heater-Ventilator**

Reg. U. S. Pat. Off.

SUPPLIES OUTDOOR AIR FILTERED CLEAN AND TEMPERED

Draper Shade Value Is Recognized Here

When the Roosevelt Junior High School, Fargo, N. D., was completed recently it was proclaimed one of the finest school buildings in the state.

Since only the finest materials had been used in its construction, the school officials decided that the best grade of furnishings should be used to enhance the natural beauty of their school. Consequently, it is a notable fact that they equipped the school throughout with Draper Adjustable Shades.

This is but one of the many testimonials of the faith that school men have in Draper Shades.

Let us show you how an installation will benefit your school.

LUTHER O. DRAPER SHADE CO.
Spiceland - Indiana

NORWEST STEEL LOCKERS

They Can't Bend These Doors—

EVEN a "tuff mut" finds it next to impossible to jam, bend or pry out of shape the super-strong door of a Norwest Steel Locker.

This is just *one* of the many sound reasons why so many schools—old and new—find it advantageous to install Norwest Steel Storage Equipment.

Our Catalog Will Assist You. Shall We Send It?

NORTH WESTERN STEEL PRODUCTS CO.
Subsidiary of North Western Expanded Metal Co.
1264 OLD COLONY BUILDING, CHICAGO

A Practical and Simple Scheme for Grading Pupils

Joseph Dostal, Karlstad, Minnesota

Every teacher and school administrator is confronted with the difficult problem of grading the pupils. Teachers quite generally are anxious to grade pupils accurately and fairly. At the same time, they want to make the "job," which is at best drudgery, as simple and rapid as possible.

The writer started out to grade pupils in his school on a ten-point scale and awarded grades in half points. This resulted in some grades of doubtful accuracy and questionable fairness. For example, some pupil received the grade of 96.1 per cent, and another the grade of 96 per cent. No matter how fair a teacher may be, it is drawing fine lines when she says that one of her pupils is one tenth of one per cent better than another pupil.

In groping for a simpler and broadly fair system, the following five-point scale was developed:

Home Report	*Teacher's Record*	*Pupil's Work*
A	4	Excellent
B	3	Good, or above average
C	2	Fair, or average
D	1	Poor, or below average
E	1	Failure

The teacher grades all recitations of pupils as excellent, good, fair, poor, or failure. Surely any teacher can place a pupil in one of these five classes. The range is wide, and yet every recitation of the pupil can be placed fairly under one or another part of the scale. In her class-record book, the teacher records the numerical grades 4, 3, 2, 1, or –1, and on the report cards to parents, the letter equivalents A, B, C, D, or E is substituted for the numbers.

However, in order that it may become more clear and to see how it works out, let us use a hyothetical illustration. The teacher's class-record book shows that John Smith has numerical grades as follows: 4–3–2–3–4–2–1–3–3–4–2. These represent the grades given in daily recitations. In totaling the grades, we derive the sum of 34. There are twelve separate grades, which means that the 34 points are to be distributed among twelve separate recitations. The answer is 2.83. In other words, the average is 2.83. In order that it may be possible to derive the exact percentage equivalent of 2.83, a percentage table has been worked out, showing the various percentage equivalents for each grade as follows:

.10 equals	60 per cent	2.52 equals	81 per cent
.20 equals	61 per cent	2.65 equals	82 per cent
.30 equals	62 per cent	2.78 equals	83 per cent
.40 equals	63 per cent	2.91 equals	84 per cent
.50 equals	64 per cent	3.00 equals	85 per cent
.60 equals	65 per cent	3.07 equals	86 per cent
.70 equals	66 per cent	3.14 equals	87 per cent
.80 equals	67 per cent	3.21 equals	88 per cent
.90 equals	68 per cent	3.35 equals	89 per cent
1.00 equals	69 per cent	3.42 equals	90 per cent
1.00 equals	70 per cent	3.49 equals	91 per cent
1.16 equals	71 per cent	3.56 equals	92 per cent
1.32 equals	72 per cent	3.63 equals	93 per cent
1.47 equals	73 per cent	3.69 equals	94 per cent
1.63 equals	74 per cent	3.75 equals	95 per cent
1.79 equals	75 per cent	3.81 equals	96 per cent
1.95 equals	76 per cent	3.87 equals	97 per cent
2.00 equals	77 per cent	3.92 equals	98 per cent
2.13 equals	78 per cent	3.95 equals	99 per cent
2.26 equals	79 per cent	4.00 equals	100 per cent
2.39 equals	80 per cent		

In our endeavor to locate the grade of 2.83 on the table, we find that it is not there, but that the nearest number is 2.78, and we therefore record that percentage grade of 83.

The marking system is divided into five sections as follows:

A—93–100
B—82–92
C—77–84
D—70–76
E—69 and below. Failure.

The letter grade on this scale would be C for John Smith.

The scheme has a number of advantages. First, it is simple and efficient in operation, making it possible to figure averages in a short time. It makes it possible for teachers to report the letter, as well as the numerical grade, of each pupil, and it relieves the teacher of much of the hard work connected with marking. It has been found accurate in general use, since it enables the teacher to arrive at the specific numerical grade, without stretching or cutting off here and there. It has been found entirely satisfactory in general use and is reproduced for the benefit of the readers of the JOURNAL who may find it suggestive for their own schools.

SIOUX CITY CHECKS UP ON FIRE DRILLS

Supt. M. G. Clark, of Sioux City, Iowa, has recently called the attention of the principals and teachers to the necessity of giving special attention to fire drills, and to maintain the condition of the buildings so that a fire drill may be called at any time by an authorized official, such as a fire marshal, a city fire chief, a member of the school board, a janitor, or a principal.

Teachers are required to have children thoroughly drilled in the matter of school exits during the better weather of the fall, so that it will not be necessary to have drills so frequently during stormy and inclement weather.

In the direction of added attention to school fire drills, the principals of the several school buildings have been asked to check the following items:

1. Are your fire gongs in good condition for service? Are any ropes, wires, or connections in need of repair? If anything is needed in this line it should be given first consideration and immediate report should be made.

2. Are all fire extinguishers in good condition for use? Note date of refilling and last inspection. If any of these need inspection and refilling report immediately to the office.

3. Are all doors in good working order so that in case of fire drill or fires there will be no obstruction from the standpoint of locked doors, or doors that do not open easily. If anything needs repair in this line, report to the office at once.

4. Are all stairways and halls clear of obstructions?

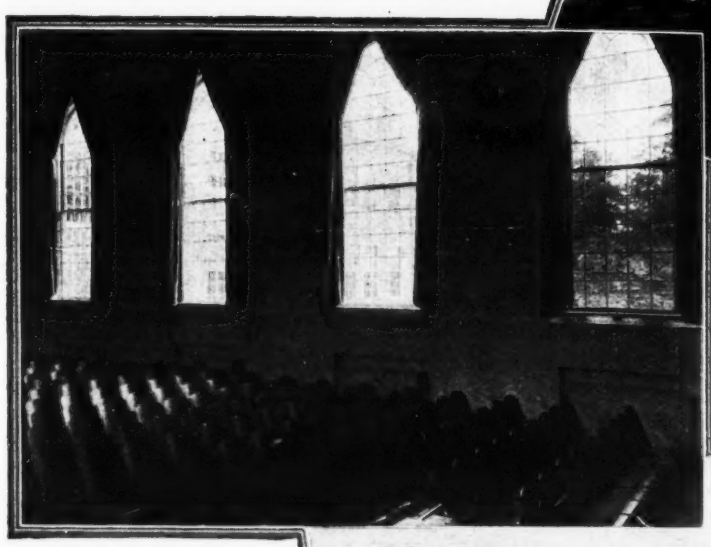
5. Is there any material in hallways, under stairs, or other places, that is inflammable and therefore a fire menace? Observe where janitors

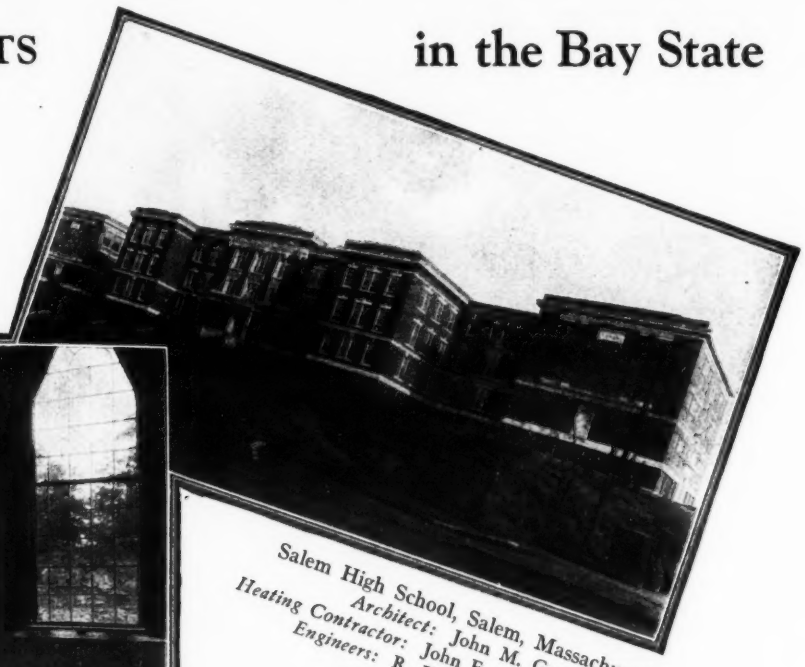
(Concluded on Page 140)

BUCKEYE Heatovent

BUCKEYE HEATOVENTS in the Bay State

Two more fine new schools equipped with Buckeye Heatovent Units





Salem High School, Salem, Massachusetts
Architect: John M. Gray
Heating Contractor: John F. Cabeen, Salem, Mass.
Engineers: R. D. Kimball Company

Malden High School
Malden, Mass.

Architect:
Desmond and Lord
Boston, Mass.

Heating Contractor:
V. J. Kenneally & Co.,
Boston, Mass.

Write for Illustrated Catalog Descriptive of Buckeye Heatovents

The Bay State was ever a leader in Education and Educational Facilities. Fresh, comfortably warmed air facilitates Education by contributing to mental alertness. Buckeye Heatovents were chosen to supply and control the fresh, warmed air for these schools.

THE BUCKEYE BLOWER COMPANY

Main Office and Factory COLUMBUS, OHIO

Sales & Service Offices

ATLANTA, BALTIMORE, BOSTON, BUFFALO, CHICAGO, CLEVELAND, DALLAS, DENVER, DETROIT, GRAND RAPIDS, HEMPSTEAD, L. I., INDIANAPOLIS, KANSAS CITY, MO., LOS ANGELES, MINNEAPOLIS, NEW YORK CITY, NEWARK, PHILADELPHIA, PITTSBURGH, PORTLAND, ORE., SALT LAKE CITY, SAN FRANCISCO, SEATTLE, SYRACUSE, TOLEDO, YOUNGSTOWN, CANADIAN OFFICES, TORONTO, ONT.

Sound Proof Doors

look like other fine doors but internally they are vastly different, being highly efficient in retarding sounds, besides being edge-tight on four sides.

Used in Schools, Colleges, Hospitals, Churches, Libraries, and Office Buildings all over America.

This door is in the private offices at the Blum women's apparel store on Michigan Avenue, Chicago.

HAMLIN

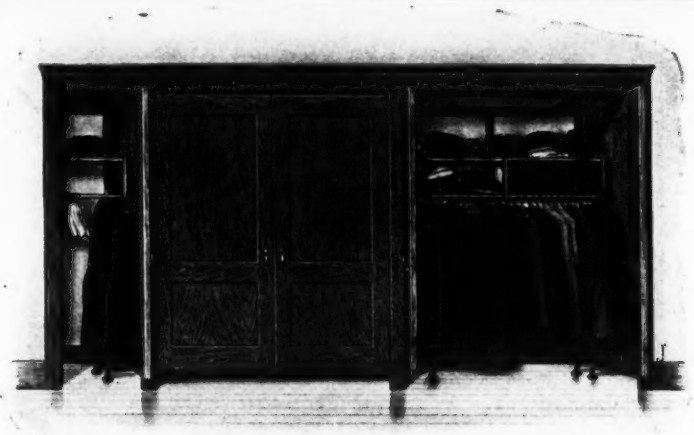
sound proof doors and folding partitions are made to match any finish, and in sizes up to 19 ft. high x 60 or more in width.

Write for details

IRVING HAMLIN

Manufacturers

1510 Lincoln Street
CHICAGO



Yesterday

Today

SAVE SPACE AND GREATLY INCREASE CONVENIENCE

with EVANS Vanishing Door WARDROBES

The EVANS VANISHING DOOR, which makes these space-saving wardrobes possible, is so constructed that at a touch it swings back, on double pivoted arms that cannot bind or rattle, to a position at right angles to that when closed. As compared with the ordinary cloakroom—in, for example, a school—EVANS Wardrobes give the same accommodations in 12' x 2' as the old kind give in 8' by the full length of the classroom—besides eliminating the need for special heating and ventilation and the wall which separates cloakroom from classroom. Soundless, mischief-proof, and astonishingly economical of space, EVANS Vanishing Door WARDROBES are being accepted as standard school equipment everywhere. The complete facts—for your files—are interesting. May we send the illustrated catalogue containing them?

W. L. EVANS
WASHINGTON, INDIANA, U. S. A.

(Concluded from Page 138)

keep all dust cloths, mops, cleaning material, etc., and be sure that nothing of this sort is kept in a place that is either insanitary in its nature, or a fire hazard.

6. See that the janitor thoroughly understands his responsibility in the matter of keeping the doors unlocked, hallways and passages clear of all encumbrances, and all inflammable material kept where it is perfectly safe from the standpoint of fire and general sanitation.

DETERIORATION OF PAPER TOWELS

The United States Bureau of Standards has found that paper towels deteriorate with time and that their absorbing qualities are considerably reduced after they have been kept for a considerable period in a warm place. The findings of the Bureau would indicate that it is advisable that paper towels be bought as soon after manufacture as possible, and that they be used up with some degree of promptness.

Three samples of paper towels were submitted to the Bureau of Standards by the Panama Canal administration for testing, to determine their absorbing quality by comparison with a towel that was considered satisfactory. A sample of a towel was also returned to the Bureau, the absorbency of which was found to be unsatisfactory. The unsatisfactory sample had been tested some time previous and had been found satisfactory. After shipment to the Panama Canal Zone, and storage for a short time, this towel was found unsatisfactory owing to a form of deterioration which had reduced its absorbing powers considerably.

The cause for this change could not be determined so that a number of towels stored for some time in the Bureau of Standards files were retested. To accentuate extremely unfavorable conditions of storage, a number of towels were treated for 72 hours with heat at 100 degrees C.

The conclusion of the Bureau was that towels stored under normal conditions for a period of 300 days indicated a considerable loss of absorbency. This seems to be due to an appreciable amount of ground-wood fibers in the towels. The towels tested show that storage conditions will change the rate of absorbency, but that the greater rate of change was in towels having ground-wood fiber.

CONSERVING THE TIME OF THE SMALL-TOWN ADMINISTRATOR

(Concluded from Page 120)

After the detail work has in part been gotten rid of, the next step is to formulate a definite budget for the superintendent's working time. It is essential that he have certain periods for supervision and consultation and then stick to the schedule except in cases of absolute necessity. It is best to make out the schedule for supervision for at least a month in advance, for then a superintendent can see just what he has to accomplish, and he will be more likely to stick to it.

Ordinary visitors should not be allowed to interrupt the schedule. Salesmen can usually be asked to wait for a short time until there is a free period. Parents, of course, should always be taken care of at once. Their visit may be their only direct contact with the school that year, and it should be made as profitable and pleasant as possible. Teachers and pupils can be informed as to the periods for consultation and asked to visit the office during those hours.

A time schedule is hard to follow, but the writer has found that it is the only satisfactory way in which to get his work done. Otherwise the temptation is too strong to drop down in the office and answer correspondence, visit with salesmen, and put in whole days without accomplishing anything constructive.

THE VISITING TEACHER IN THE SCHOOLS

The teacher is a specialist in her field, the parent is a specialist in his field, and the child is a specialist in his field. In almost every classroom, teachers find children who present problems which cannot be solved unless there is some knowledge of the child's home life, leisure time, relationships with other children, and individual interest and development.

Miss Frances L. Range, of the Detroit Teachers' College, writing in the Detroit Educational Bulletin for May, points out that the visiting teacher is best equipped to do this work because of her training and experience as a teacher and social worker. Such a teacher gathers the social information and interprets it to the regular teacher, who is then better able to instruct the child. The visiting teacher goes even farther than this interpretation of the problem and the presentation of the complete picture of the child and the influences in his life. She carries on her treatment work with the child, his parents, and his teacher.

Since it is the teacher who sees the problems, it is she who, in consultation with the school principal, refers them to the visiting teacher. The school principal welcomes the visiting teacher on the staff as a specialist, who is able to discover the elements in the child's environment and personality that are hindering him and those that may be utilized in helping him, and interprets these from the standpoint of the whole situation. Often children are referred to by a parent, an organization, or another child, and sometimes the child himself requests assistance.

Work with individual cases includes classroom problems of scholarship or behavior, evidenced by: (1) poor work, (2) lack of interest and lack of progress in schoolwork; (3) special scholarship handicap, such as failure in reading; (4) repeatedly troublesome conduct; (5) personality traits, such as shy feeling of inferiority or superiority; (6) instability or excessive nervousness which involves erratic behavior.

It is evident that a child may not be absent one day from school, not have a minute's tardiness, not have any health problems, which would bring his case to the attention of either the attendance or the health department, but still present difficult problems in need of adjustment.

√ Quality of Materials

√ Skill of Makers

√ Titusville Boilers Have Double Welded Seams

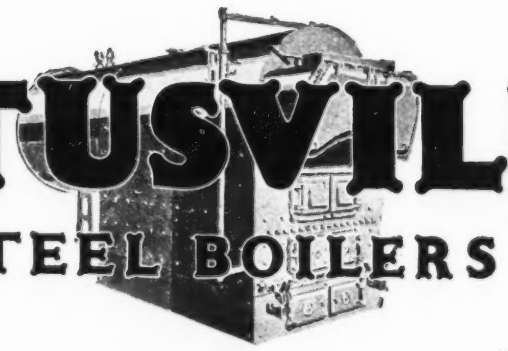
√ Range of Size and Rating

√ Prompt Delivery

√ Extra Large Fire Box Doors for Easy Tube Removal

Keep these things in mind

..and you'll specify



TITUSVILLE

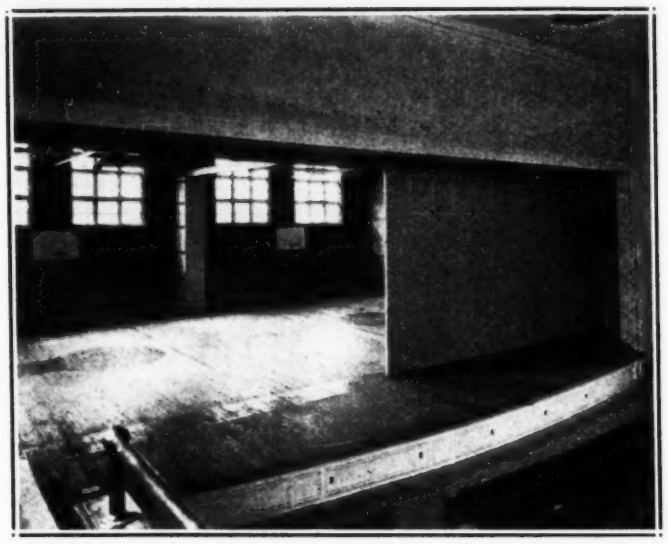
STEEL BOILERS

THE TITUSVILLE IRON WORKS CO.

Division of Struthers Wells-Titusville Corporation

TITUSVILLE, PA.

15



Greater Strength

with LESS WEIGHT

A distinctive feature of Horn Selfold Partitions is their strength as compared with heavy, unwieldy doors. The built-in sound absorbing materials are not only highly efficient, but very light. They will not sag nor pack, and add greatly to the strength instead of merely to the dead weight.

The highest quality lumber is used. It is hand selected for its strength and beauty. It is specially cut on the west coast, and is shipped directly to the modern Horn factory where cabinet workers, expert from years of experience, construct it into partitions that will not warp, stick, or buckle.

This combination of strength with light weight permits the construction of a truly sound proof folding partition that

Operates Without a Floor Track

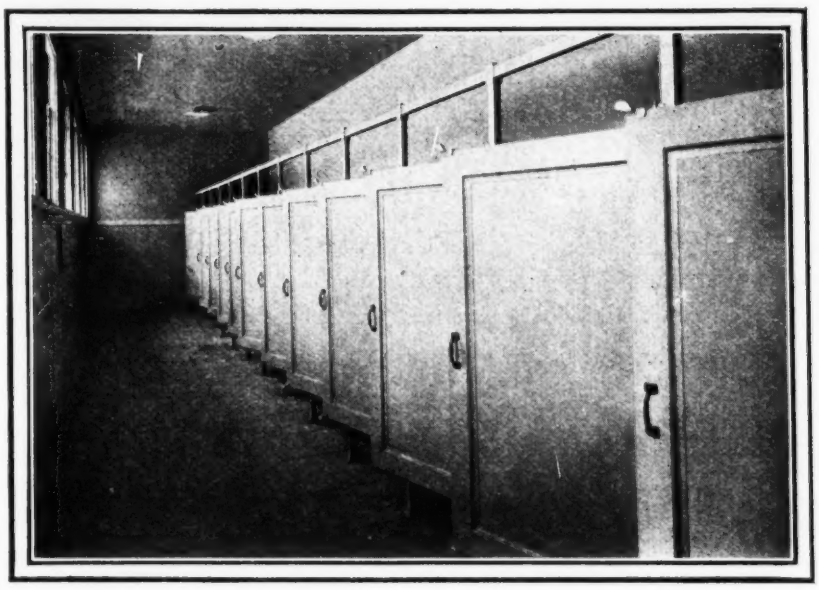
A floor track catches dirt and rubbish and makes a partition hard to open and close. The Horn Selfold Partition, top hung, no floor track, mechanically controlled, operates easily and quickly — so easily that a ten year old child can quickly open or close it—not only when newly installed, but throughout the entire life of the partition. Free from the rough usage which partitions that stick and buckle are sure to get, strong and beautiful because of their special design, Horn Folding Partitions will give years of eminently satisfactory service.

Get the facts about this
BETTER PARTITION *NOW*—

before you build. We will gladly send you full information about Horn Selfold, light, strong, easily operated partitions and show you how you can use 100% of your school building space at all times.

HORN FOLDING PARTITION CO.
FORT DODGE, IOWA

Branches in all principal cities



Modernizing School Toilet Facilities

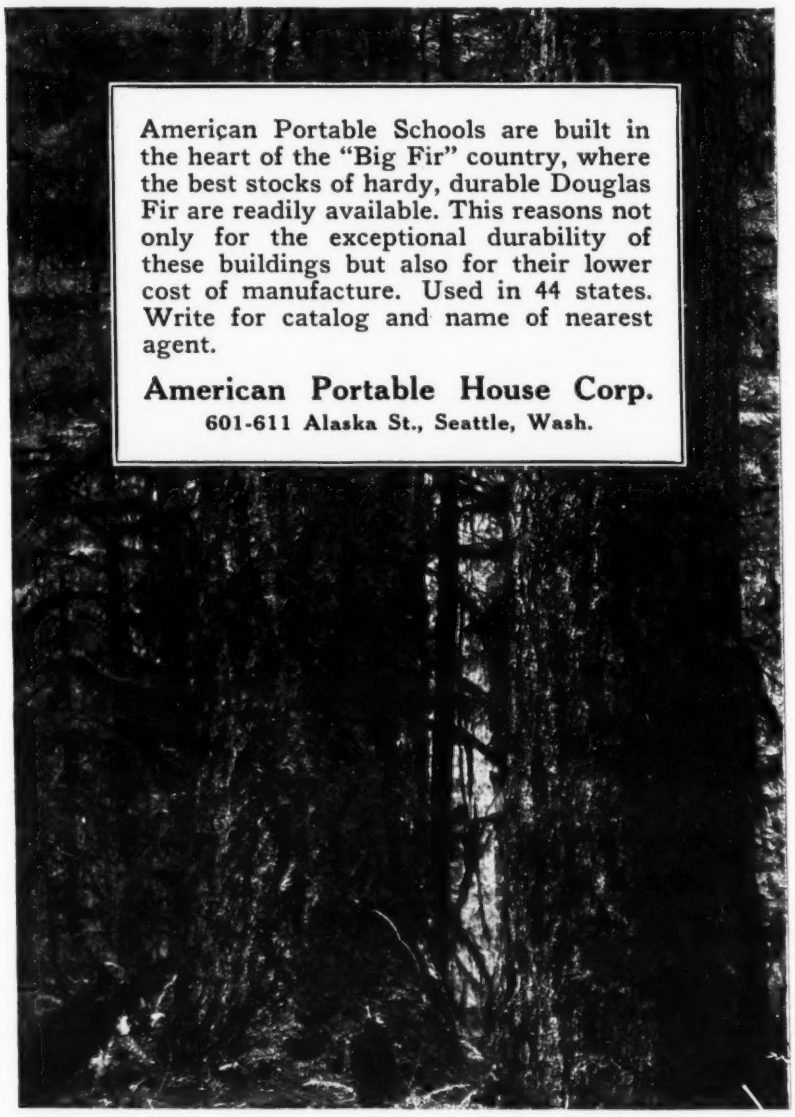
CARE you confronted with the problem of economically rehabilitating or increasing the present toilet facilities in your school? Before you start an expensive repair program on the antiquated, worn-out equipment you now have, or try to use inadequate equipment for another school year---investigate WEISTEEL modern, sanitary toilet compartment enclosures.

The first cost is within the reach of any rehabilitation appropriation. Installation is inexpensive since practically all fittings are attached at the factory. Complete erection instructions accompany each shipment and your school maintenance staff can erect this equipment with a minimum of effort.

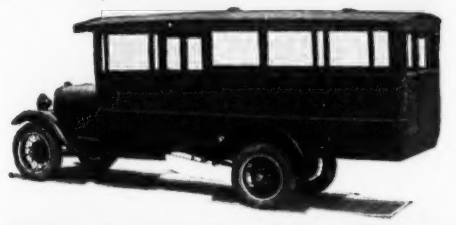
In every possible way WEISTEEL design, construction and workmanship will prove the soundness of your judgement by maximum service over a period of years. We will be glad to furnish you complete information. . . . HENRY WEIS MFG. CO., INC., Elkhart, Indiana.

WEISTEEL

SHOWER STALLS-COMPARTMENTS-CUBICLES


American Portable Schools are built in the heart of the "Big Fir" country, where the best stocks of hardy, durable Douglas Fir are readily available. This reasons not only for the exceptional durability of these buildings but also for their lower cost of manufacture. Used in 44 states. Write for catalog and name of nearest agent.
American Portable House Corp.
601-611 Alaska St., Seattle, Wash.

AMERICAN PORTABLE SCHOOLS



WAYNE answers effectively the most important questions in School Bus Construction

SAFETY PLUS—in transportation for the school child is paramount in your mind as well as in Wayne's.

Superior construction with the best materials absolutely insures this essential requirement—passenger protection.

Also, quick delivery and free after-service are guaranteed by WAYNE'S widespread distribution system.

Details on Request

THE WAYNE WORKS, Inc.
Richmond, Indiana, U. S. A.

A Study of School Ventilation in Rural New York

The Necessity of Furnace or Mechanical Ventilation Demonstrated

That children in one part of a schoolroom may roast, while others freeze, that children may have hot-heads and suffer from cold feet, and that, above all, colds and other respiratory ills are definitely connected with stove heating in rural schools is one of the findings of a recent study of the New York Ventilating Commission. The study which was conducted under the supervision of Mr. Thomas J. Duffield, secretary of the commission, proved very clearly that uniformity of temperature, and improvement in health conditions, promptly follow the use of positive forms of ventilation.

The school ventilation study was made in Cattaraugus county and was one of three field studies undertaken by the commission following its reorganization in 1926. In the present study, a special commission cooperated with the local public health organization so that the study might be used as a health demonstration. Considerable help was received from the Milbank Memorial Fund, which met the cost of the field work.

The ventilation study was made to determine the air conditions in one and two-room rural schools, with the secondary purpose of learning how these air conditions affect the health of the pupils. The study covered 48 rooms in 41 different buildings in rural-school supervisory districts, comprising the eastern third of the county. With one exception, all the rooms included in the study were in buildings of frame construction on stone or concrete foundations, with the traditional vent openings to permit free circulation of air underneath the building. Only two of the buildings were more than one-story high.

As a result of the study, it was found that 78 per cent of the furnace-heated rooms and 70 per cent of the stove-heated rooms had average temperatures above 70 degrees F., and none of them showed average temperatures below 67 degrees, whereas but 31 per cent of the stove-heated rooms could be classed in the former category, and 28 per cent of them averaged less than 67 degrees.

One series of data was the temperature on the tops of the desks at the corners, and at the center of the seating section. The averages of these readings, together with the average temperature as shown by the room temperature at the time of the study, were studied. Stations 1, 2, 3, and 4 were located at the corner desks of the room, and station 5 was the desk in the center of the seating section. The floor temperatures were taken at station 5, and in 16 schools the ceiling temperatures were taken at representative points during the latter weeks of the study. The average readings at corner desk-top stations in certain classrooms were 8, 10, and 12 degrees below those of the room thermometers. These variations were attributed to the location of the heating unit.

At the center of the seating section, the average readings were above those of the room thermometers. The average observed excess of temperature at this station in all rooms was 4.2 degrees. Single readings at this station were found to exceed 100 degrees F, with one instance of 104 degrees noted.

Again, the study revealed that the furnace-heated rooms have a far more uniform lateral distribution of temperature than have the rooms heated by stoves. In none of the furnace-heated rooms did the average desk-top temperatures differ as much as 5 degrees, whereas less than half of the rooms with jacketed stoves, and only 4 per cent of the rooms with unjacketed stoves showed such uniformity.

Of the rooms heated by stoves, 40 per cent showed average lateral temperature differences greater than 10 degrees. This was true of rooms with jacketed or unjacketed stoves, and indicates that unless the jackets are properly constructed, little will be accomplished in keeping the air in circulation, or in eliminating overheating by radiation by providing jackets for stoves. In two classrooms with ordinary stoves, the difference between the lowest and highest desk-top temperatures at the time of the study averaged greater than 20 degrees.

In the matter of floor temperatures, the rooms heated by furnaces and jacketed stoves are clearly superior to those heated by stoves without jackets. None of the nine furnace-heated rooms showed an average floor temperature below 60 degrees, whereas 43 per cent of the rooms with jacketed stoves and 62 per cent of the rooms with ordinary stoves fall in this group. Three of the furnace-heated rooms (33 per cent) and one room with a jacketed stove (14 per cent) showed average floor temperatures above 65 degrees, while none of the rooms with ordinary stoves were in this group. Only one room showed an average floor temperature above 70 degrees. This school is furnace-heated and the floor of this room was quite warm as a result of leakage from the room below.

In the study, there were numerous individual instances of floor temperatures below 45 degrees F., but the lowest floor temperature observed was 31 degrees F.

Ceiling temperatures were observed in 16 rooms; 7 of these rooms were heated by furnaces, 2 by jacketed stoves, and 7 by ordinary jacketed stoves. The averages of the observed readings varied from 78.2 to 102.5 degrees, while 11 schools showed one or more readings above 100 degrees. Extremes of 118 and 116 degrees were noted in 2 furnace-heated classrooms, while in another, the highest ceiling temperatures noted were 86 and 82 degrees. Two rooms with jacketed stoves showed maximum ceiling temperatures of 110 degrees and 100 degrees, respectively, while 3 rooms heated by ordinary stoves showed ceiling temperatures of 107, 105, and 104 degrees. In some rooms heated with ordinary stoves, the average difference between ceiling and floor temperatures ranged from 20 to 43 degrees. The high ceiling temperatures and the low floor temperatures showed how poorly the heat was distributed when no provision was made to keep the air in circulation.

The study also revealed that the average relative humidity in the different classrooms varied from 24 to 49 per cent. With no provision for artificial introduction of moisture in the atmosphere, the relative humidity in the classrooms depends upon the outdoor humidity and the temperature difference between outdoors and indoors at the moment of observation. In one classroom which had the lowest average relative humidity (24 per cent), individual readings as low as 16 and 18 per cent were obtained. In each of 2 schools with the highest average temperatures, relative humidities of 17 per cent were observed. All other determinations in these schools showed relative humidities above 20 per cent. In the coldest school, however, 6 determinations showed relative humidities between 47 and 54 per cent.

A second part of the study was concerned with the incidence of respiratory illness among the pupils and the relationship between this type of illness and schoolroom air conditions. This study

NO FATALITIES
at this school fire

Flame, Heat, Gases, Smoke, Ice and Snow cannot deter the safe exit of children and teachers from the second or third floor of a burning schoolhouse, when a POTTER TUBULAR SLIDE is attached.

PANICS, which are more to be dreaded than fires, cannot happen, as fire drills are practiced on the Fire Escapes. There is no danger of crowding, the children becoming frightened into jumping or falling by accident, as is possible with other types.

Write for details and specifications.

38 States now have schools safe in case of fire

POTTER MFG. CORP. 1858 Conway Bldg. CHICAGO

The only Fire Escape with Service Records approved by the Underwriters' Laboratories.

BASKET BALL
EQUIPMENT

Manufacturers of the Famous

SHOMMER "METAL" BACKBOARDS
SHOMMER "VITROLITE" BACKBOARDS
PORTABLE FOLDING BACKSTOPS

Ask About the New "Rigid" Goals.
No Side Braces. New Net Attachment.

BASKET BALL EQUIPMENT SPECIALISTS.

SEND FOR GYMNASIUM CATALOG.

CHICAGO GYMNASIUM EQUIPMENT COMPANY

1835 W. LAKE ST. CHICAGO

included 860 pupils and covered a period of ten weeks.

The study showed that total absenteeism ranged from 6 to 37.8 per cent of the total pupil sessions, with a mean of 14.1 per cent and a median of 13.3 per cent. It was found that absenteeism due to respiratory illness varied from 1.2 per cent to 9.7 per cent of the total pupil sessions, with a mean of 4.7 per cent, and a median of 3.8 per cent. The upper and lower quartile values were 6.4 per cent and 2.3 per cent, a difference of 4.1 per cent.

Respiratory illness among the pupils, it was noted, ranged from 0.3 per cent to 51.6 per cent of all pupil sessions, with a mean of 18.3 per cent, and a median of 16.5 per cent. The schools with only one room showed somewhat higher rates of total absenteeism than did the schools with two or more rooms. The difference between the rates was 3.4 per cent. When the total respiratory illness is considered, there appears to be little to choose between the large and smaller buildings, the total rates being 23.1 per cent and 22.9 per cent, respectively. It was found that the total absences are about twice as frequent in the rural county as in New York City and Syracuse, but absenteeism due to respiratory illness and illness among pupils in attendance show higher rates in both Syracuse and Cattaraugus counties than in New York City.

The study revealed a general parallelism between the inverted outdoor-temperature curve, which also showed the difference between the average indoor and outdoor temperatures, and the curve of respiratory illness absenteeism. Both of these were found to decline with the coming of spring. There appeared to be a remarkable agreement in the fluctuations of the respiratory illness absenteeism with precipitation above the mean. With the removal of the seasonal trend in the respiratory illness absenteeism, the coefficient of correlation between the deviations of this curve and those of precipitation during the preceding week is $+0.64 \pm 0.10$. It was brought out that the weeks in which the outdoor temperature is low, when the difference between the average indoor and outdoor temperatures is great, are not the weeks in which absenteeism due to respiratory illness is excessive; nor does an excess of absenteeism due to this cause regularly follow periods of low temperature. On the other hand, except for one instance, weeks with precipitation above the mean are frequently accompanied by increased respiratory illness, which reaches a maximum during the following week.

The unimportance of temperature change alone on the incidence of respiratory illness is demonstrated in two ways: First, by the low and statistically insignificant simple and partial coefficient of correlation — the latter with the effect of precipitation kept constant, and secondly, by the almost insignificant change brought about in the coefficient of correlation between precipitation and respiratory illness when temperature is held constant.

In general, the prevalence of respiratory illness showed an inverse relationship to outdoor temperatures, that is, the incidence of respiratory illness was greater during the cold months of the year. In the absence of other factors, however, low temperature itself did not appear to be directly associated with increased respiratory illness.

During periods of low temperature, deviations from the general trend of the incidence of respiratory illness varied with the fluctuations in precipitation, the maximum effect occurring in the week following that which had an excess of precipitation.

TRANSPORTATION FACILITIES EXTENDED AND IMPROVED

Transportation of school children in the United States is being reduced to a systematic business basis, according to a recent report of the chief of the division of rural education of the U. S. Bureau of Education, Mrs. Katherine M. Cook, in a survey of rural education published by the Bureau.

The report shows that approximately one third of the states now grant aid specifically for pupil transportation. The annual expenditure for transportation has reached $40,000,000. In the year 1927-28 a total of 50,000 pupils were transported to school, at a cost of $750,000, as compared with 30,000, at a cost of $560,000 in 1925–26.

It appears that transportation is a necessary and growing factor in school centralization. Improvement in roads and in efficiency and comfort of motor vehicles have brought large benefits to rural children. There has been considerable advance in the cost-accounting systems used by the districts furnishing transportation, especially those furnishing it on a large scale. Pupil transportation is being reduced to a systematic business basis.

The amount of state aid has been materially increased during the biennium in Delaware, Louisiana, New Jersey, and Pennsylvania.

Legislation during the period has been of rather minor importance. Laws relating to transportation were revised in several states, the purpose of which was to extend the benefits of transportation at public expense over a wider territory and to children living at greater distances from a central school. Large state grants for pupil transportation were made in Delaware, Louisiana, New Jersey, and Pennsylvania, and for the erection of buildings in Alabama, Delaware, Georgia, and New York.

In three states, New York, Washington, and Utah, state-wide studies of transportation facilities and costs have been made under the direction of the state education departments.

At the present time there are approximately 17,000 consolidated schools in the country, including similar schools called by other names, with an annual expenditure of $40,000,000 for transportation.

CHATS DURING RECESS

At Charleston, Mississippi county, Missouri, the schools are conducted all summer and the vacation time set for the winter months, all due to mud or muddy roads. Because of the impossible roads in the winter time the schools in the county begin the first of April, and vacation time in midwinter.

The board of education of Milwaukee, Wisconsin, will undertake to establish standards as to dress for high-school girls. The principals are authorized, however, to exercise their own judgment as to what constitutes decency in schoolroom wardrobe. A girl may wear a party dress, tea gown, or sport ensemble so long as her stockings, neck line, sleeves, etc., are where they should be. That is the dictum of the principals.

This is the way the Tiffin, Ohio, Advertiser puts it: "Listen! How about a twelve-months school year? Impossible! Well, that is what J. J. Richeson, superintendent of the Youngstown schools is advocating. Dr. Richeson's school year would be divided into four terms and he would accomplish in six years, what now is accomplished in eight years, he says. He argues that it would result in a tremendous saving, because school plants would be kept in operation the year around. He has nothing to say, however, of the increased salaries teachers naturally would demand. But never fear, boys and girls, Superintendent Richeson is not going to find many advocates for his novel plan, which is not novel at all, having been in force during the early stages of the development of the educational system in many countries and later discarded by nearly all of them."

Make this Test—

prove the lasting qualities of flexible subdrainage for yourself

WHERE have you had the greatest trouble with drain pipe? Where the most frequent breakage and replacement?

Do this. Install Armco Perforated Pipe the next time — where surface pools give evidence that there's drain failure below.

That will be the last of your trouble with the drain in question—and the first of repeated orders for Armco.

For Armco drains resist damage by trucks or rollers — freezing water or soil—erosion or corrosion. There are two reasons: Armco Perforated Pipe is made of Armco Ingot Iron—and it's *flexible.*

Let our engineers consult with you regarding present difficulties or future plans. No charge.

ARMCO

ARMCO CULVERT MFRS. ASSOCIATION
Middletown, Ohio

Armco culverts and drains are manufactured from the Armco Ingot Iron of The American Rolling Mill Company and always bear its brand

ARMCO
Perforated
PIPE

G&G G&G

1885 SCHOOLS in 44 States

have come to the same decision
ABOUT ASH REMOVAL

SCHOOL BOARD Members, School Architects, and School Engineers, all vitally interested in the selection of efficient equipment for the school plant, have approved G&G Ash Removal Equipment because of its

SAFETY: Note how sidewalk opening is fully protected by G&G Sidewalk Doors and Swing Guard Gate. Prevents accidents. When Hoist is not in use, doors close and lock *automatically.* Cannot be tampered with.

ECONOMY: One man can do the work of three or four. Electric Hoists use surprisingly little current (we have exact figures), and all equipment is strongly constructed to give many years of service.

SPEED: Ash removal is quickly accomplished without spilling of ashes and with practically no noise.

Write for particulars

GILLIS & GEOGHEGAN
551 West Broadway, New York, N. Y.

The G&G ELECTRIC REG. U.S. PAT. OFF.
Telescopic Hoist
With Automatic Stop and Gravity Lowering Device

G&G G&G

Pep!

Enthusiastic co-operation in Physical Education is best secured by having adequate Narragansett Gymnasium Equipment.

Dependable for nearly half a century in the manufacture of Gymnasium Apparatus, Portable Bleachers, Tank Spring Boards, Steel Lockers, Cabinets, and Shelving.

NARRAGANSETT MACHINE CO.

PROVIDENCE, R. I.

Est. 1882

Chicago
1504 Monadnock Bldk.

New York
214 E. 40th St.

Order . . .
A DOUGHERTY CAFETERIA

St. Charles Seminary - Overbrook, Pa.
Paul Monaghan - Architect

A DOUGHERTY CAFETERIA in your school will bring order at eating periods and provide adequate facilities for serving food at all times.

Few, if any, high schools are built in this modern time without complete cafeterias, while older schools without them, realizing the advantages, are having installations made.

With our 77 years of successful equipping of kitchens and dining rooms your logical choice for a school cafeteria is, of course,

W. F. DOUGHERTY & SONS
Everything For The Kitchen
1009 ARCH ST. PHILADELPHIA

THE COURTS AND METHODS OF PUPIL TRANSPORTATION

(Concluded from Page 47)

exempt from the payment of tolls scholars going to and from school, not scholars who are engaged in carrying on a business over the road."

THE FINANCIAL CONTROL OF STUDENT ACTIVITIES

(Concluded from Page 48)

Extracurricular activities are coming to be recognized as a tremendous influence in student morale. When properly balanced and directed they may be made as valuable an asset a school administration can acquire; but when allowed to run wild or to center in a single groove they may easily become a source of friction and ultimate disaster. Valley Junction has found the central-control plan of financing high-school activities a remarkably efficient governor of the school machinery.

A CORRIDOR-VENTED SCHOOLHOUSE

(Concluded from Page 55)

The mechanical equipment is of the best type, designed especially for heavy school duty. Heat and ventilation is provided by means of a vacuum steam system, with unit ventilators in all classrooms, kindergarten, library, and gymnasium. The air exhaust from the classrooms, etc., is drawn through grilles in the doors and then through the corridors to ventilators in the second-floor-corridor ceilings.

The building cost as follows: Construction, $106,153; heating and ventilation, $29,000; plumbing, $6,142; electrical work, $7,515; total cost, $156,250; cost per cubic foot, 37.7 cents.

AN INTERESTING BRANCH LIBRARY

(Concluded from Page 56)

A building in which the architects have solved all of the problems just suggested is the Washington Square Branch Library at Kalamazoo, Mich. The building is placed on the narrow, diagonal lot in such a way that maximum service and adequate light are insured. The Gothic detail of the exterior has been very much simplified to secure the best possible effects with tapestry brick, limestone trim, and purple and blue slates.

The main floor has been planned to center all activities in the charging desk which is so placed that it is in view when patrons enter the vestibule and pass into the lobby. Every part of the juvenile and adult reading rooms is also in full view of the librarian on duty at the desk. Both reading rooms are practically identical in size and general management. Each has a fireplace, recessed casement windows, rough plastered walls, beamed ceilings, and built-in bookcases. The exposed side-wall supports and beams are adz-cut and, like the remaining oak woodwork, are stained in soft gray-green. The lighting fixtures are of special design, worked out in wrought iron.

The workroom for the librarians and a small restroom adjoin the working space back of the charging desk. Toilets for the public are placed in an ingenious way adjoining the vestibule.

The basement, which is quite as interesting as the main floor, may be used independent of the library rooms for community gatherings.

The building costs are as follows:

General Construction	$34,900
Vacuum steam heating	1,955
Electrical wiring and fixtures	1,809
Plumbing and sanitary installations	1,293
Equipment	2,358
Architects' fees	2,000
Site	3,000

The architects were Messrs. Billingham and Cobb of Kalamazoo. The building is in charge of Miss Flora B. Roberts, librarian.

CURRENT EXPENSE DISTRIBUTION IN NORTH CAROLINA

Where does the current expense dollar for schools come from, and for what purpose is it spent? These questions have been answered in a report just issued by the North Carolina state education department.

The report shows that more than half of the current expense of public education is borne by county ad valorem taxes. Local or district taxes furnish more than one fifth of the funds for this purpose. The state from the general fund appropriates 13.6 per cent of the money to operate the schools. Slightly more than five per cent of the money used to run the schools is obtained from poll taxes, fines, and dog taxes. The remainder of the amount needed for the purpose comes from miscellaneous sources and from the balance of last year's business.

The report shows that out of every dollar paid out for current expense items, 77.2 cents is for instructional or teaching service, 6.2 cents for operation of the plant, 2.6 cents for maintenance of the plant, 7.6 cents for auxiliary agencies, and 5.2 cents for general control or the administration of the schools.

According to the data presented, the sum of $26,656,310 was raised for running the public elementary and high schools of the state in 1927–28, or $140,835 more than was raised in 1926–27. From this amount, $26,580,686 or slightly more than a million dollars, was spent in 1926–27.

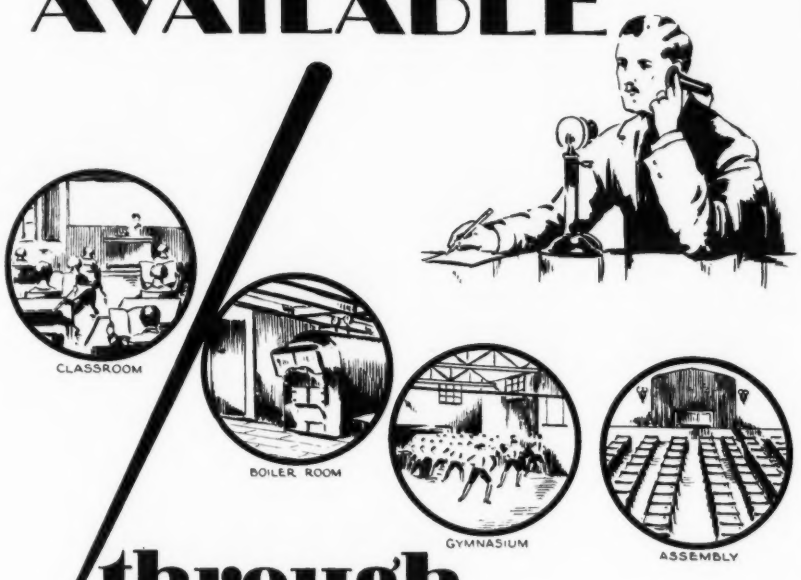
The larger part of the amount raised came from county and ad valorem taxes, yet the amount raised from this source for 1927–28 was nearly $600,000 less than it was for 1926–27. The amounts received from local district taxes and from miscellaneous sources also decreased during the yearly period—local taxes from $6,180,325 to $5,701,200, and miscellaneous funds from $843,117 to $406,745, more than fifty per cent.

State funds, on the other hand, increased nearly fifty per cent, from $1,934,164 to $3,634,915. In other words, during 1926–27 state funds represented 7.3 per cent of the funds raised, whereas in 1927–28, 13.6 per cent of the school moneys for current expense came from the state treasury.

The amounts spent for general control and operation of the plant each slightly exceeded what was spent the year before, while maintenance of plant and fixed charges decreased in amount during the same period.

Of the total $26,580,686 spent for operating the public schools of the state, $17,122,958, or 64.4 per cent, was for the purpose of educating the rural children, or 74.7 per cent of the total children enrolled. A total of $9,457,728 was spent for educating the city children.

INSTANTLY AVAILABLE



through

"ALL-RELAY" AUTOMATIC TELEPHONES

The North "All-Relay" Exchange is a complete Automatic Telephone System especially designed for schools. It meets school needs exactly, giving highest operating efficiency combined with lowest operating and maintenance costs.

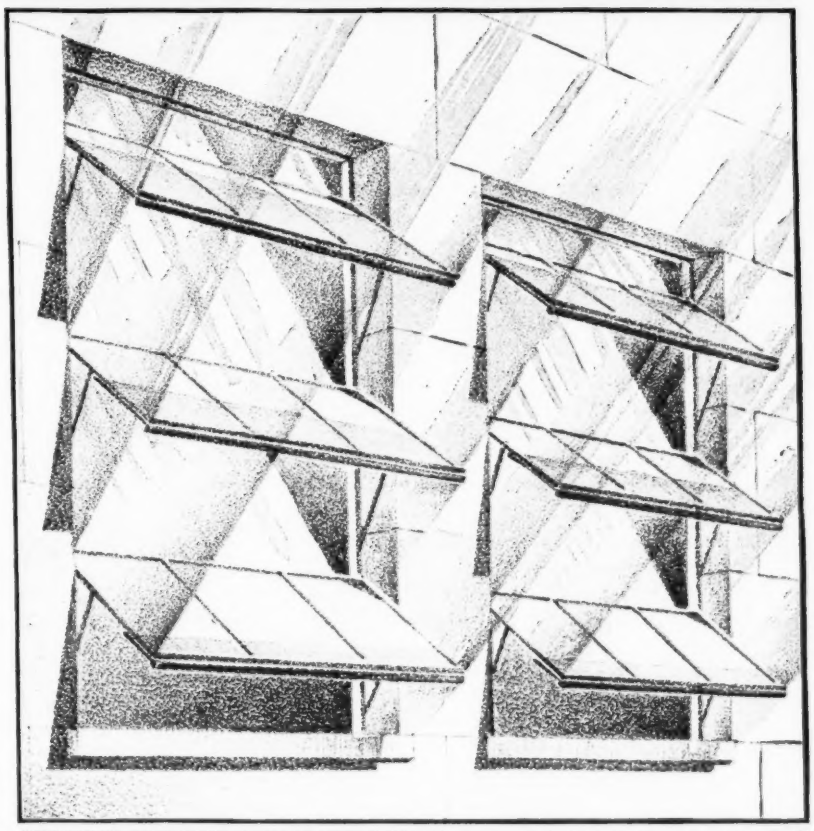
The "All-Relay" School Telephone System requires no operator, is always on duty ready to give rapid, reliable and secret service at any time of the day or night. "All-Relay" stands for simplicity and the elimination of all complicated and troublesome station selectors. The latest dial type telephones are used.

The automatic "Code Call" system incorporated in the "All-Relay" Exchange gives all telephones on the system immediate access to any party regardless of his or her location in the building at the time of the call. This ensures instant and reliable contact with any member of the organization at any time of the day or night.

Write for Particulars.

THE NORTH ELECTRIC MFG. CO.
ESTABLISHED 1884
GALION OHIO

TRUSCON DONOVAN AWNING TYPE STEEL WINDOWS



Invented and Developed by John J. Donovan, Architect, A. I. A.

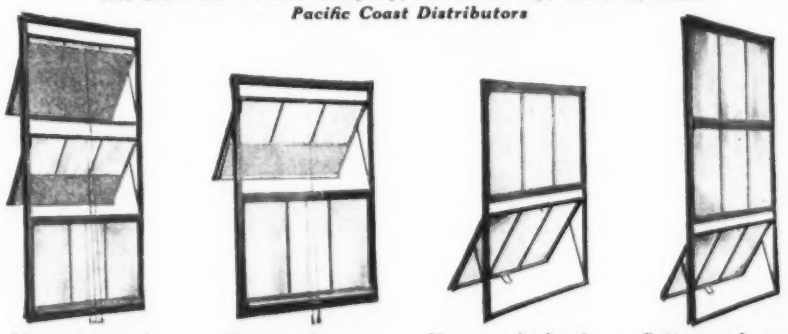
For Daylighting and Ventilation of SCHOOLS, OFFICES EDUCATIONAL and INSTITUTIONAL BUILDINGS

Movement of lower sash operates upper sash—no window poles required. Sunlight is reflected from shades on open windows and is diffused—no awnings required. Truscon Donovan Awning Type Windows are of high quality throughout, but due to large production are moderately priced.

Full information, quotations and literature on request.

TRUSCON STEEL COMPANY, YOUNGSTOWN, OHIO
PACIFIC COAST PLANT — LOS ANGELES

Pacific Coast Sales and Engineering Offices:
SAN FRANCISCO, LOS ANGELES, SEATTLE, PORTLAND
The Universal Window Company, 1916 Broadway, Oakland, Calif.
Pacific Coast Distributors



Upper two sash open—bottom sash closed.

Upper sash open — lower sash closed.

Upper sash closed —lower sash open.

Bottom sash open — upper two sash closed.

Book News and Reviews

Schoolbook Economy

C. W. Carroll, Philadelphia, Pennsylvania

Of the numerous ways of economizing in the purchase and use of school textbooks and library books, the most obvious is to lengthen the life of books which are in use by restoration. The idea is not at all new. Many school systems have for years practiced economy in book expenditures by repairing and rebinding books. In some of the larger cities the school boards have found the idea so valuable that they have even installed their own rebinding plants as a distinct part of the school-equipment shops.

There are very few school-library departments and public libraries in the United States that do not rebind their books and also bind magazine files into book form. The reason libraries have developed the plan of rehabilitating books is due directly to the fact that the distribution of books is the all-important job of libraries, and library executives are keenly awake to the necessity of lengthening the life of books.

The rebinding of books in public libraries has become so essential a part of library economics that the American Library Association maintains a standing committee on bookbinding, the duty of which is to formulate and reformulate specifications for satisfactory binding and to set up standards of good workmanship. The budget of every well-regulated library of any size in the United States includes a well-considered item to be spent for rebinding books.

The colleges which offer courses in library science universally include a study of book rebinding in the courses required for a degree. Only very few teachers' colleges in the United States dwell on the care of books because books are apparently quite secondary in importance in a well-organized teacher-training course. Teachers' colleges in which courses in school administration are offered are, however, realizing from year to year the necessity of adequate caring for the physical school plant and are providing prospective superintendents of schools with information on the fundamental economic value of rebinding text and library books.

Most librarians report that rebound books circulate from three to four times longer than new books, and this situation to a certain extent applies to rebound textbooks. While on its face this statement may seem ridiculous to the layman, any public librarian or school library supervisor can readily verify it.

So far as the writer has been able to go into the history of rebinding textbooks, the school board of Newark, N. J., was among the first of the city school systems in the United States to definitely adopt a policy of rebinding books. Between 1905 and 1908, Dr. Sexton of the Newark schools, made a scientific study of the subject and carried on a broad test. On the basis of his recommendations the first shipment of books belonging to the Newark schools was sent to the bookbindery in 1908. During the past 21 years this school system has rebound several million textbooks and library books.

A report made by a committee of the National Association of Public-School Business Officials at the convention of the organization held at Atlantic City, May 16, 1922, pointed out that a yearly saving of about 25 per cent of the total book budget can be made by a well-considered plan of rebinding. In the same report the chairman of the committee stated that the assistant superintendent of schools at Newark in charge of textbooks showed a saving of $9,500 on a book expenditure of $65,000 in the year 1921. The findings of the committee were based on information received from 60 cities in various parts of the United States.

In establishing a policy of textbook rehabilitation it is of very great importance that the proper procedure be followed in selecting and shipping books to the bindery. Primarily, it is necessary to select a binder who specializes in the rebinding of text and library books. There is just as much difference in bookbinders as there is in other trades and occupations. To the layman a bookbinder is a bookbinder, but every printer and business man who has had occasion to purchase considerable binding knows that this is not at all a fact. It is just as foolish to send a book for rebinding to a blank-book manufacturer as it is to send a valuable dog to an optician to be cured of distemper. It is better not to attempt the rebinding of books at all than to have the work done by a binder who lacks experience and understanding of the problem. Lists of firms specializing in this work are available and may be had from various educational organizations and from such sources as the Subscribers' Service Department of the SCHOOL BOARD JOURNAL.

The best returns can be had if the school board adopts a well-considered procedure for collecting and handling books which are to be rebound. The procedure will vary according to the size of the school system. In small communities it will probably be necessary to collect books once a year, but in larger cities it is readily possible to make the collection semiannually and even quarterly. Some one person connected with the business department of the school system should be in charge of the collection of the books and should be required to sort them for the binder according to a well-established plan. It is, of course, not wise to send to the binder books which are not likely to be continued in use. If a school system uses the open-plan of book adoptions and it is problematic whether a given lot of worn books will be used again, it may not be wise to attempt rebinding. The large binders who specialize in rebinding school and library books include in their organization a service department which will be glad to assist local school authorities in establishing a procedure in selecting and shipping books for rebinding in order that the rebinding will pay a profit.

The best plan for collecting books and the best specifications for rebinding books which the writer has found are those employed by the school systems in Baltimore and Newark.

The one important problem that arises in the rebinding of schoolbooks is that of collating and replacing pages which have become loosened. The binder who is selected to rebind textbooks should carry a supply of pages to replace those which may be missing from books which are to be rebound. In this connection it is well to send to the binder a supply of books that seem to be beyond redemption so that good leaves may be used. The inexperienced local binder who has no knowledge of the problem of rebinding schoolbooks simply throws away textbooks from which pages are missing. The economy of this procedure must be questioned because many books will be discarded which otherwise could be saved by the binder who has a stock of leaves for rebinding purposes.

The second problem in handling of books for rebinding is that of sorting those which are worth rebinding from those which should be sent to the dealer in second-hand paper stock. Many school people seem to think that any book, no matter how badly it is tattered and torn, can be restored in the bindery. This is a sad mistake. Books like any other commodity should be sent to the bindery for rebinding at the proper time and should not be allowed to be completely worn out. A man would not think of having half of the roof of his building blown off by the wind before calling for the roofer to make the repair. The wise house owner will call the roofer upon the appearance of the first bad leak. There is no reason why a similar procedure should not be followed in handling books for rebinding.

A study which the writer has carried on indicates that the city of Buffalo several years ago received a return of approximately 97 per cent of a large number of books which were rebound within a twelve months' period. During the same year the City of Baltimore received a return of 95 per cent on all the books which had been sent to the bindery. This average compares very favorably with the return received by well-managed libraries who have intelligently studied policies of rebinding their books. The average is much higher than that received by most school boards who have not been wise in selecting books for the bindery.

The cost of rehabilitating books varies a great deal according to the binder employed to do the work. If books are rebound according to the specifications of the two cities mentioned, a fair price seems to be about one half the original cost of the books. It is generally acknowledged that the life of the average textbook is three years. In many instances a rebound textbook has lasted from nine to twelve years, but six years of service seems to be the average life of a rebound schoolbook.

In conclusion it is suggested that school boards develop their policies of rebinding books gradually and on the basis of satisfactory experience. Before having books rebound on a large scale it is well to try out the plan with a limited number of books. Such a trial should determine not only the efficiency and the economy of the service which the bindery selected renders, but also the desirability of rebinding a given title or series of titles in a given subject. The school board which is careful in selecting the titles to be rebound and in selecting a high-grade specialist to do the binding is certain to make a large saving for the schools.

It is better not to tell children that reading is good for them, or that it is a duty. Reading is a joyous thing. It makes rainy days sunny, and sickness bearable. Give the child a chance for a rich old age, when books become the rest from care, and the escape from boredom and pain. Let reading be a part of play. Thus, it will become an armor against evil, and a strength in time of trouble. —John Farrar.

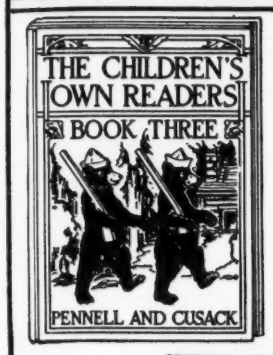
BOOK REVIEWS

The Alpha Individual Arithmetics

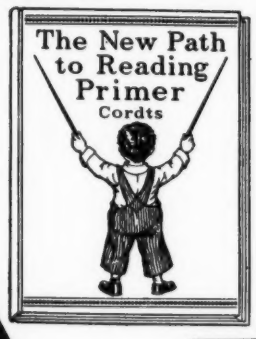
Book two, part one, and book two, part two, cloth, 136 pages; price, 36 cents. Published by Ginn & Company, Boston, Mass.

The present books are part of a new series written to meet the needs of schools in which individual instruction is provided for the individual child. The material has been presented in a form which is easy of comprehension, and permits the child to proceed at the rate best adapted to his ability. The character and arrangement of the work leaves the teacher free to attend to the varying needs of the individual children within the group, each of whom may be at a different stage of the work.

(Continued on Page 150)



Six Important Series of NEW Elementary-School Books

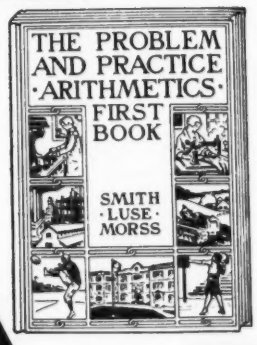


The Children's Own Readers

By Pennell and Cusack. A nation-wide experiment involving 50,000 children and 1500 teachers determined scientifically the prose content of this series. The series contains much new reading material. A complete basal series with pre-primer, primer, six books, and manuals, charmingly illustrated and attractively bound.

The New Path to Reading

By Anna D. Cordts. A self-help method that makes children practically independent in learning to read, a "plateau" plan of grading the material, lively plays, and action pictures are a few things that make this series unique.



The Problem and Practice Arithmetics

By Smith-Luse-Morss. A three-book series combining modern content and methods based on scientific research, with simple presentation, language, and typography. Beautifully illustrated. Also a number primer and manuals.

New Books for the Executive

The Business Administration of a School System

By *Ward G. Reeder*, Ohio State University. A competent discussion of the fundamental policies of a practical program of administration in city and rural school systems. With valuable reports of practices in different cities. $2.40

Administration of Pupil Personnel

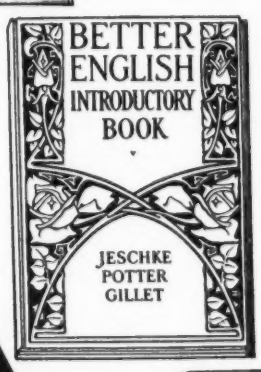
By *Arch O. Heck*, Ohio State University. Giving a real understanding of all phases of pupil personnel from records for filing to adjustments to pupil needs. $2.40

A Game Program in Physical Education

By *Jessie Rand Tanner*, State Teachers College, San Diego, California. A big progressive plan covering in detail materials and methods for every grade in the elementary school and junior high school. Skillfully graded to care for the interests and varying capacities of pupils. $1.48

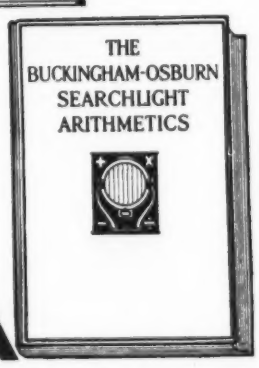
The Earth and Its People

By Atwood and Thomas. A new series of geographies on the single cycle plan which is widely endorsed by progressive schools. With a distinctly modern and effective teaching technique.



Better English

By Jeschke-Potter-Gillet. Available in a two-book, three-book, and six-book edition. A new series in language, grammar, and composition, with many new features contributed by research and experimentation.



The Searchlight Arithmetics

By Buckingham and Osburn. Based on extensive scientific research and meeting the most exacting modern requirements for drill, test material, and provision for individual differences.

GINN AND COMPANY

Boston New York Chicago Atlanta Dallas Columbus San Francisco

It leads

THE OPEN DOOR LANGUAGE SERIES

20 months after publication approximately one out of every 13 children in grades 3 to 8 of the elementary schools of the United States are using THE OPEN DOOR LANGUAGE SERIES.

by

SCOTT: CONGDON: PEET: FRAZEE

Have YOU seen these books?

They are available in a three-book or a six-book series.

HOUGHTON MIFFLIN COMPANY

Boston New York
Chicago Dallas
San Francisco

AMERICAN BOOK COMPANY

Educational Publishers

NEW YORK, 88 Lexington Ave.
CINCINNATI, 300 Pike St.
CHICAGO, 330 East 22d St.
BOSTON, 63 Summers St.
ATLANTA, 2 N. Forsyth St.

Descriptive circulars, catalogues, and price lists will be mailed on request to any address.

Your correspondence is solicited and will have prompt attention.

(Continued from Page 148)

Book two, part one, offers for the first half of the second year work in addition and subtraction combinations, measures, telling time, counting money, simple fractions, and practice work on the calendar. Each stage of the lessons closes with a cumulative review, preparatory to the tests which the pupil must pass before beginning the next group.

Book two, part two, is intended for the closing months of the second year. The work includes addition of addends, analysis of numbers, additional fractions, writing dollars and cents, weights and measures, checking substraction, value of coins, higher-decade subtractions, telling time, and two-step problems in addition and subtraction. Four diagnostic tests are provided at the end of the book.

If self-activity is to be a basic principle in primary education, material of the kind here presented will be necessary. If the individual and his day-to-day progress is to be a vital factor in our crowded city and rural schools, books of this kind cannot be dispensed with. And, finally, if interest is to supplement drill, if valuable information is to give point to the use of numbers, and if thinking in terms of quantity is to be habitual, just this type of combined text and workbook must be provided.

Experimental Evaluation of Seven Composition Scales

By Dorothy Speer. Paper, 85 pages. Price, $1.50. Published by Johns Hopkins University Press, Baltimore, Md.

This objective test of seven standardized tests in composition indicates quite conclusively the relative values of the several tests under varying conditions. We need more studies like the present to debunk some of the tests which pass as scientific and standard, and to inspire further study to make the really valuable tests more standard and more scientific.

Five Comedies from Shakespeare

Edited by E. K. Chambers and Edith Rickert. Cloth, 156 pages. D. C. Heath & Company, Boston, Mass.

The publishers are rendering a real service in reprinting in one volume, with the full notes, introductions, and literary appreciations of the Arden edition, those five old masterpieces: A midsummer Night's Dream, Much Ado About Nothing, As You Like It, Twelfth Night, and The Tempest.

A Map of Children Everywhere

By Ruth Hambridge, 22 by 37 in. Price, $2.50. John Day Company, New York.

The life and joys of children in all parts of the globe are depicted in this decorative, interesting, and informative map. The map will be decidedly helpful in teaching the costumes, characteristics, and customs of children in the elementary schools.

Come to Order

By Emma M. Wines and Marjory W. Card. Cloth, 84 pages. Published by Doubleday, Doran and Company, Garden City, New York.

This book deals with the essentials of parliamentary practice in a simple, concise, and practical form. The text is based upon the standard works on parliamentary law, eliminating, however, the more technical and involved deliberations. Every essential phase of the subject is adequately covered. The dramatization of typical situations, the practical questions, and test problems, made the book most attractive.

Case Problems and Tests in Business Law

By Frederick K. Beutel and Carmen G. Rediker. Paper, 108 pages. Price, 52 cents. Published by Ginn & Company, Boston, Mass.

The present book presents a number of case problems and tests which are designed to furnish an effective means for applying and measuring the pupil's knowledge of the important points covered in the usual course in elementary business law. The material is interesting and has been arranged with a view of securing objective results which may be accurately and easily graded. It offers a series of concrete and simple problems, which are well within the grasp of the average student, and which lend themselves to constructive teaching.

Each problem is arranged in question-and answer form and deals with a definite point in business law. Space has been provided at the right for test marks.

First Steps in Teaching Number

By John R. Clark. Cloth, 225 pages. Price, $1.48. World Book Co., Yonkers. N. Y.

The present book has been produced as a result of skillful designing by competent authors, working on a sound pattern, and after painstaking testing and proving under actual classroom conditions. It provides for a complete course in arithmetic for the first two grades, which is in accord with progressive trends in education, and which applies the results of modern psychology to the way in which children learn arithmetic.

The plan of the book provides for the teaching of number facts according to class development, followed by individual pupil practice on each of the facts, and by oral and written testing of each pupil. Provision is also made for recording each pupil's mastery of each fact on a pupil progress record. An inspection of the progress record enables the teacher to determine the facts upon which further practice is needed whether by individual pupils, or by the class as a whole.

The book takes up such topics as the pupil's needs and the attainment of objectives, the first steps in learning, presenting the number symbols, with work in addition, subtraction, measurement, problem solving, and drills for maintaining interest and eliminating fault habits in computation. A list of review questions are found at the end of each lesson.

The book should find a real place in the primary grades for it is here that the foundation is laid for training in arithmetic and numbers.

Perspective Drawing

By Joseph Brahdy. Cloth, 8vo, 104 pages. Price, $2. D. Van Nostrand Co., New York, N. Y.

Architectural perspective is here reduced to the simplest principles and presented in the shape of explanations of procedures and practical problems. The work is carefully adjusted to the vocational-school and high-school level.

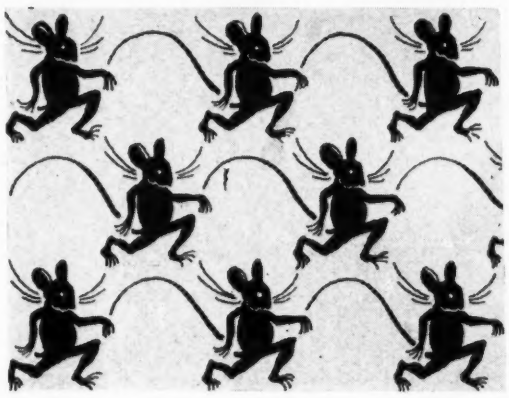
An Introduction to American Civilization

By Harold Rugg. Cloth, 610 pages, illustrated. Price, $1.92. Ginn and Company, Boston, Mass.

Here is a study of the economic life in the United States. The chief factors in the nation's power and wealth, its production ability, its system of distribution, its trade relations, its racial composition, and its standards of living, are presented in an effective manner. Rural and urban life, industry and commerce, communication and transportation as these existed in 1800, and as they are today are comprehensively described in a series of pictures. Statistical information is in many instances reduced to graphs and charts. Dr. Rugg shows that we live in a new and changing civilization, and explains what the location of the United States has to do with the physical comfort of its inhabitants and their standards of living. He contributes an exceptionally interesting chapter on the racial origin of the population.

The principal value of the book must be found in the splendid study made of the invention and use of mechanical power, and the marvelous

(Continued on Page 152)



Dozens of New Ideas

It seems hard, at this time of year, when teachers and pupils would rather be outdoors than in, to maintain interest and enthusiasm in the classroom.

But there is a wealth of inspiration in the late autumn scene, the blue skies, the scarlet maple, and the yellow birch reflected in the lazy, laughing brook.

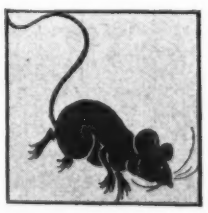
Trees, hillsides, children and animals, views from the window, memories of vacation; all can be interpreted in new designs and in new color schemes.

BRADLEY ART MATERIALS

suggest a multitude of pleasing subjects. Whether you develop your idea in cut paper, crayon, water color or tempera paint, you will find Bradley materials to meet your needs. The following give some idea of the scope of the Bradley Line:

Poster Paste	Bradley Crayons
Construction Paper	Tempera Colors
Vivi-Tone Paper	Water Colors
Cross Section Paper	Bradley's Scissors

All these classroom helps and many others are listed and pictured in the latest Bradley catalog. We will be glad to send you a copy.



AMERICAN CHILDHOOD MAGAZINE

brings each month a brand new crop of ideas for the classroom. Teachers in hundreds of schools find American Childhood a veritable treasure chest. A sample copy will be sent you free of charge on request.

MILTON BRADLEY COMPANY, Springfield, Mass.

Boston New York Philadelphia
Atlanta San Francisco
Chicago: Thomas Charles Co., Agents Kansas City: Hoover Bros., Agents

Seven Important Reasons for Selecting
The Neatfit Adjustable Book Cover
For All Your Textbooks

ONE: It is made of a single piece of the highest grade stock. This stock is as tough as cloth and will outwear three ordinary covers.

TWO: It is cut and folded true and exact.

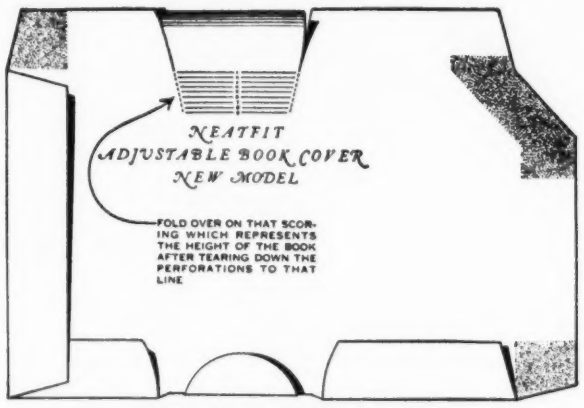
THREE: The design for adjusting the covers saves much time, enabling the pupils to do neat work in fitting the cover easily and quickly.

FOUR: It has broad gluing surfaces of sanitary glue, which do not come loose.

FIVE: It is absolutely waterproof.

SIX: It fits snugly and presents an unbroken surface.

SEVEN: Considering the remarkable strength and adequate wearing qualities it has no equal in flexibility.


NEATFIT
ADJUSTABLE BOOK COVER
NEW MODEL
FOLD OVER ON THAT SCORING WHICH REPRESENTS THE HEIGHT OF THE BOOK AFTER TEARING DOWN THE PERFORATIONS TO THAT LINE

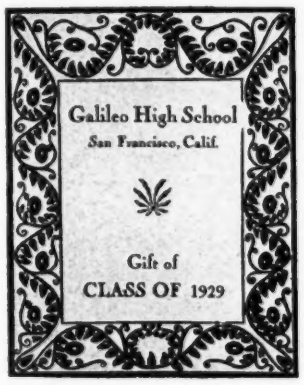
THE BEST BOOK COVER EVER MADE FOR SCHOOL USE

Millions of the Neatfit Adjustable Book Covers Are Sold Each Year

THE NEATFIT ADJUSTABLE BOOK COVER WILL INCREASE THE LIFE OF ANY TEXTBOOK 50%

IROQUOIS PUBLISHING COMPANY, Inc.
Home Office—Syracuse, New York
NEW YORK ATLANTA DALLAS CHICAGO

BOOK PLATES



Book Plates establish the ownership of books in an attractive and pleasing way, and furnish protection against loss.

By the use of Gift Book Plates you may recognize and encourage gifts to your library.

WRITE FOR SAMPLES

250 Book Plates	$2.25	*Postpaid*
500 Book Plates	2.90	*Postpaid*
1,000 to 3,000 Book Plates	3.90 per 1,000	*Postpaid*

GAYLORD BROS., INC.
STOCKTON, CALIF. SYRACUSE, N. Y.

(Continued from Page 150)

development of the country's industrial activities. While the natural resources of the country are adequately described, the author points out the manner and effectual utilization of these resources. He thereby demonstrates the genius of American progress, power, and prosperity.

The author does not hesitate to introduce other considerations. Why the people really live here, what their interdependence is, and to what extent they depend upon other countries, are facts that are well told.

The book is attractively illustrated. The preface supplied by the author is quite instructive as to the purpose in mind. Each chapter is followed by a list of books which deal in greater detail with the subjects discussed. An appendix tells of the areas and population of the several states.

Elementary Free-hand Drawing

W. Earl Brownjohn. Forty lessons, 9 by 12, in envelope. The Bruce Publishing Company, Milwaukee, Wis.

This series of 40 lessons is presented in the shape of 20 plates suggesting problems in representation. The objects shown are all familiar and are readily applied to the study of the simple principles of one- and two-point perspective. The material will afford a rather complete study of the fundamental principles such as students in high schools and junior schools are able to undertake.

The Technique of Teaching Typewriting

By Jane E. Clem. Cloth, 357 pages. Gregg Publishing Company, New York, N. Y.

This book which is intended for students training to become teachers of typewriting and for private study by teachers already in the field, undertakes to deal in a concrete and practical way with the underlying principles of typewriting instruction.

The book aims to give teachers and prospective teachers the best methods the profession affords, in order to offer an opportunity to make more effective the ideals of instruction. It discusses the psychology of typewriting, the teaching process, equipment in typewriting, the training of the beginner, the relation of accuracy to speed, tests and contests, special methods and records, standards of attainment, and grading methods. The book contains a rather complete bibliography and an index.

Professional Tests as Measures of Teaching Efficiency in the High School

By Charles W. Boardman. Cloth, 84 pages. Published by Teachers College, Columbia University, New York City.

The author of this thesis has set up tests of intelligence and of professional knowledge as a means of determining the efficiency of high-school teachers. The study is the first carefully controlled application of valid objective tests to a considerable group of secondary-school instructors. While the author is disappointed to find a low correlation with the opinions of supervisors and pupils, the study offers much food for thought concerning the preparation of teachers and their familiarity with present-day theories and methods.

Forming Correct Language Habits

Pad I, By J. K. Ellwood. Paper, 50 pages; Pad II, 54 pages; Pad III, 50 pages. Price 25 cents each. The Meador Publishing Co., Boston, Mass.

Contains exercises for dictation and other written work in three primary grades.

Geschichte in Bilde

By Prof. Dr. Bernhard Seyfert. Cloth, 122 pages. Price, $2. Buchhandlung des Waisenhauses, Verlag, Halle (Saale).

This pictorial history of civilization is addressed to adults. American schools will find little or nothing not already available in more usable form. ,

Dictionary of Technical Terms

Frederick S. Crispin. Cloth, octavo, 288 pages. Price, $1.25. Bruce Publishing Company, Milwaukee, Wis.

This dictionary has been prepared for the use of teachers and pupils in industrial-arts and vocational classes in elementary and secondary schoools. It contains definitions of commonly used expressions in woodworking, electrical and metal working trades, drafting, architecture, etc. The definitions are usually informal and directly applied to shopwork so that the student may exactly know the meaning of the word as it is used in the trade or art in which he is engaged. While no attempt has been made at completeness, the book is amply inclusive for the average school and workshop.

Detroit Mechanical Aptitudes Examination for Boys

Detroit Mechanical Aptitudes Examination for Girls

By Harry J. Baker and A. C. Crockett. Price, $3.00 per 100. The Public School Publishing Company, Bloomington, Ill.

These tests have been developed to determine the general mechanical aptitude of boys and girls by the group method. They involve tool knowledge and information, motor skill, and visual acuity. It is expected that the tests will be used at junior and senior high school levels and that the findings will be used in connection with a program of guidance and counsel.

The tests have been developed in the Detroit schools under conditions which give every promise that they will readily be standardized. All of the ordinary precautions which can be taken in the preliminary preparation of tests have been made use of in order to insure validity and reliability.

In several spots the tests indicate clearly elements that are not applicable except in a distinctly urban and industrial situation, in which both boys and girls have had some rather close contacts with machinery and mechanical operations and girls have had the use of fairly expensive household utilities not available in all communities.

The Environment of 3-Year-Old Children

Dorothy Van Alstyne. Cloth, 108 pages. Price, $1.50. Published by Bureau of Publications, Teachers College, Columbia University, New York City.

A scientific study to discover what the relationships are between specific factors of home environment and the intelligence and vocabularies of 3-year-old children. ,

The Influence of Meaning on Children's Choices of Poetry

Blanche E. Weekes. Cloth, 51 pages. Price, $1.50. Published by Bureau of Publications, Teachers College, Columbia University, New York City.

This objective study proves very clearly that children are strongly influenced in reading poetry when they thoroughly understand it.

Backgrounds of Biology

By John Giesen, Sc.D., and Thomas Malumphy, A.B. Cloth bound, 278 pages. Published by the Bruce Publishing Company, Milwaukee, Wisconsin.

The application of biological principles and laws and the implications of biological theory in every phase of life have awakened college authorities to the need for a knowledge of biology on the part of students in so-called academic courses. The teacher, the engineer, the lawyer, the economist, the business man, the homemaker, the social worker all find the application of biological data and laws an inevitable part of their occupational lives. And still the crowded condition of college courses makes it difficult for students to take an exhaustive course in biology with laboratory work, etc. Nor is this necessary.

The present book has been developed to fill this exact need. It addresses itself to college students who are wholly unfamiliar with biological facts

(Concluded on Page 154)

The teaching of Music itself . . . made more effective

through every school year

The thorough, up-to-the-minute revision of "Music Appreciation for Children" completes the Victor series of authoritative texts from beginning to end of school life. Each of these four companion books represents the most modern pedagogical treatment of the subject in its scope. All have been tested under practical class-room conditions in thousands of schools and are used in leading systems and institutions throughout the country.

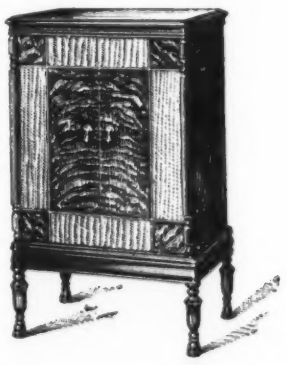
The most recent extensive adoption (3 out of the 4) is that of the State of Alabama.

From 1st Grade through University

1. Victor "Rural Unit No. 1" (with 13 Records). The standard definite course for children in rural communities;
2. "Music Appreciation for Children"—comprehensive graded lessons for first to sixth grade;
3. "What We Hear in Music"—the great musical source book for high schools;
4. "Appreciation and History of Music"—widely used in colleges, universities and conservatories.

The whole range of the literature of music is covered by Orthophonic Victor Records. The specially-recorded Educational List covers every special educational need.

With the powerful and incredibly realistic new combined Victor-Radio-Electrola, you command a medium of musical reproduction that infinitely extends your scope and efficiency.



Victor-Radio-Electrola—the complete, modern educational instrument: reproduces both broadcast and recorded music electrically. List price $275, less Radiotrons.

The Educational Department

VICTOR TALKING MACHINE DIVISION

RADIO-VICTOR CORPORATION OF AMERICA

CAMDEN, N. J.

Teach by Sight as well as Ear

And now—the magic-like power of motion pictures to build character—to formulate lasting mental images—enters into the schoolroom as an important part of daily instruction.

The DeVry School Films, in both narrow and standard widths, have all been edited by trained specialists in our leading universities.

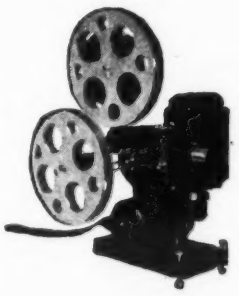
The outstanding points of history live again—wonders of botany and biology visibly unfold themselves to the pupil's eye—the geography and inhabitants of strange lands indelibly impress themselves on youthful minds.

In selecting motion picture equipment, school boards, educational lecturers and teachers are turning enthusiastically to DeVry. Perfect projection, simplicity of operation—and stop-on-film feature, which enables teacher to hold the picture on screen at any time, is winning widespread endorsement.

For complete details mail coupon.

QRS-DeVry Corporation
333 N. Michigan Avenue
Chicago, Illinois
New York San Francisco

For Classroom Use:
Type "G" 16 mm. Projector—simple—compact, **$105.00** with case. Also Type "B" 16 mm. Projector, **$55.00.**



For both Auditorium and Classroom:
The famous DeVry Type "E" 35 mm. Projector —light in weight—self-contained—easy to carry —simple to operate, **$250.00.**

QRS-DeVRY CORPORATION—Dept. U-11
333 N. Michigan Avenue, Chicago, Ill.

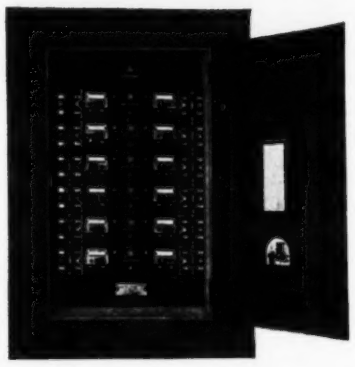
Gentlemen:
Please send me descriptive literature and information on the DeVry Projector and school films.

Name.....

Address.....

City..... State.....

FOR ALL SCHOOLS



FA Panelboards

The Permanently Safe Type

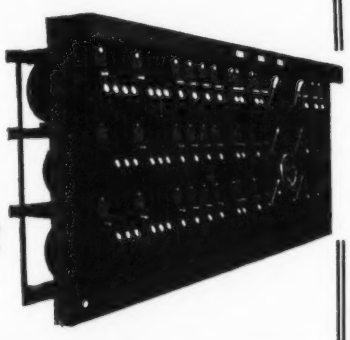
Right design, standardization in all respects, quality workmanship and materials make FA Panelboards the proper type to use. FA permanent safety makes them almost essential to use on school jobs.

FOR SCHOOL AUDITORIUMS

MAJOR FA SYSTEM *of Light Control*

Where there are children in the Auditorium or on the stage, they must be protected. No flexibility or range of operation need be sacrificed with the FA Major System.

Send for literature on both products.



Frank Adam
ELECTRIC COMPANY
ST. LOUIS
OFFICES IN TWENTY-FIVE CITIES

EVERYTHING

for your

STAGE

a thirty-year old organization to serve you

RELIABLE--

EFFICIENT

Write

Twin-City Scenic Co.

2819 Nicollet Ave., Minneapolis, Minn.
605 Century Bldg., Milwaukee, Wis.
2310 Cass Ave., Detroit, Mich.
911 Widener Bldg., Philadelphia, Pa.

(Concluded from Page 152)

and who have not the time to enter upon an exhaustive course. It stresses the fundamental facts and principles of biology, and aims at clearness and simplicity of expression. The need for such a book has been evolved out of the experience of the authors as teachers of undergraduates and graduates who are preparing to enter one of the professions other than medicine or dentistry.

The text is divided into seventeen chapters in which the cell theory, as to the structural unit of life, metabolism and growth by intussusception, reproduction, environment, and heredity and so on, are thoroughly discussed.

There are complete chapters on the germ plasm, diseases, heredity, and the eugenic claim. Organic evolution and the origin of life are adequately dealt with. Also the subjects of bacteria, infection, and immunity.

Rather full attention is given to the human body, the digestive system, circulatory system, assimilation, fats, and proteins. There is also a discussion on the nervous system, glands, etc.

The last chapter deals with the subject of animal psychology, discussing mind and matters, instinct and reflex action, and human versus animal intelligence.

The text is adequately illustrated and supplied with a serviceable index.

Stories of American Pioneers

By Sarah D. Heard and M. W. King. Cloth, 234 pages. Price, 88 cents. Published by John C. Winston Co., Philadelphia, Pa.

Here is one of those fascinating books that stir the spirit of adventure. The story of the American pioneer has always provided interesting and instructive literature for young and old.

The authors tell in a graphic way about the Indians of old, about the pilgrims who came to New England, and about the explorers of the midwest and west. There are stories of Daniel Boone, of the Lewis and Clark expedition, and the conquest of the country west of the Mississippi valley.

The text is delightfully phrased. There are plenty of illustrations, some in line drawings, some in color. The book is a real contribution to the list of books for the beginning study of history in the primary grades.

The Music Hour

Third Book. By Osbourne McConathy, W. O. Miessner, Edward B. Birge, and Mabel E. Bray. Cloth, 136 pages. Published by Silver, Burdett & Company, New York City.

Here we have a collection of songs provided for by a group of music instructors who, in the light of their experience, have chosen the numbers that are most appropriate for classroom service. They dug deep into the rich treasures of the music world and brought out that which is beautiful, elevating and refining. In addition to the selections made, the authors have added texts and compositions of their own. The book carries a number of illustrations of great composers, and some classic pictures which fittingly accompany certain texts. The illustrations on page 27 seem to be out of harmony with the plan of illustrating the book.

Tropical Tales

By Elizabeth K. Van Deusen. Cloth, 240 pages. Published by Silver, Burdett & Co., New York City.

This book deals with Porto Rico. The author has fathomed the spirit of that beautiful country. She takes her readers into the interior of a land that is picturesque, tells them of its people, its customs, through its folk tales and stories.

The incidental descriptive material covers the urban life found there. There are public buildings, monuments, harbors, and commercial activities shown in a series of illustrations. The industries carried on in an agricultural way are explained. The text, however, emphasizes through delightful stories, the customs, traditions, and habits of the people that live on the island.

Treasure Island

By Robert L. Stevenson. Cloth, 356 pages. Price, $0.60. The Macmillan Co., New York, N. Y.

Educators frequently complain that children do not treasure schoolbooks, and that their reading habits deteriorate when they leave school.

If all classics read at school were as attractively printed, illustrated, and bound as is the present addition to the "new pocket classics" series, it is certain that boys and girls would keep them in the family bookcase and re-read them.

From Ten Till Now

By Julia A. Schwartz. Cloth, 309 pages. Price, $1.20. World Book Co., Yonkers, N. Y.

The subtitle explains the purpose and content of these interesting stories. "Stories of the Growth of Friendliness" are seven tales based upon historic evidence of man's development, from enmity and hatred for all strangers, toward friendly feeling toward all. The stories have a strong child appeal. The style is simple, the language not too difficult for grades five to seven. A number of the illustrations do not seem to be adapted to children and do not harmoniously illustrate the stories.

Singing Time

By Satis N. Coleman and Alice G. Thorn. Quarto, cloth, 48 pages. Price, $2.50. The John Day Company, New York, N. Y.

Two leaders in the movement for creative education have here combined to prepare a collection of brief songs for young children of kindergarten and nursery-school age. The tones are extremely simple; the words are based on child interests in play; and the music is carefully studied to be within the range of beginners' voices. The material is both an original and an important contribution to kindergarten music.

The Merchant of Venice and A Midsummer Night's Dream

By William Shakespeare. Edited by W. C. Underwood. Cloth, 139 pages. Price, 60 cents. Published by The Macmillan Company, New York City.

These reissues of popular volumes of the Macmillan Pocket Classics have been revised under the editorial direction of H. Y. Moffett, who has provided new biographical sketches, literary appreciations, and modified notes.

The publishers have provided a new format, improved typography, and attractive Fabrikoid binding, together with excellent illustrations that should appeal to the adult reader as well as the adolescent student.

TEXTBOOK NEWS

—Houghton Mifflin Company, of Boston, Mass., has estimated that one out of every thirteen pupils in the graded schools of the country is studying one of the Open Door Language books this year. This is considered a very remarkable record when it is known that the books were published twenty-one months ago. The estimate was made upon the basis of enrollment statistics for the past few years prepared and issued by the Bureau of Education.

—The American Book Company has just issued its 1929 catalog of supplementary reading books, under the title of "A Guide to Good Reading."

The catalog is handsomely illustrated with significant and interesting pictures taken from a number of the 303 titles listed and described in the catalog.

AN ASSISTANT LIKE THIS WOULD BE INVALUABLE

If it were possible, would you like to have an able assistant, always beside you, during classes?

An assistant who would, unquestioningly do your bidding, answer your every command, promptly and quietly?

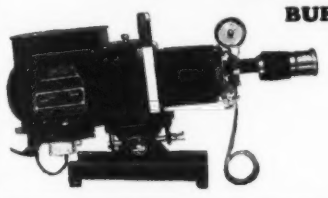
An assistant who would be always ready and willing to serve you regardless of your mood or the weather?

An assistant who would interest your students to such an extent that discipline would be one of the easy phases of the day?

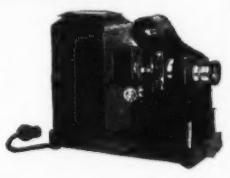
An assistant who would visualize to every pupil each part of the day's lessons as you taught them?

This is not the idle dream of a tired teacher. IT IS A DREAM EASILY REALIZED by using filmslides and a good classroom lantern as a part of your regular equipment, such as Model DA or M (illustrated) Delineascope. Detailed data will gladly be sent you upon request.

SPENCER LENS COMPANY
BUFFALO, N. Y.



New York Chicago
San Francisco Boston
Washington



NOVELTY SCENIC STUDIOS
BUILT ON MERIT

DRAPERIES STAGE SETTINGS
SCENERY RIGGING
ASBESTOS CURTAINS

for schools, little theatres, clubs, halls, auditoriums

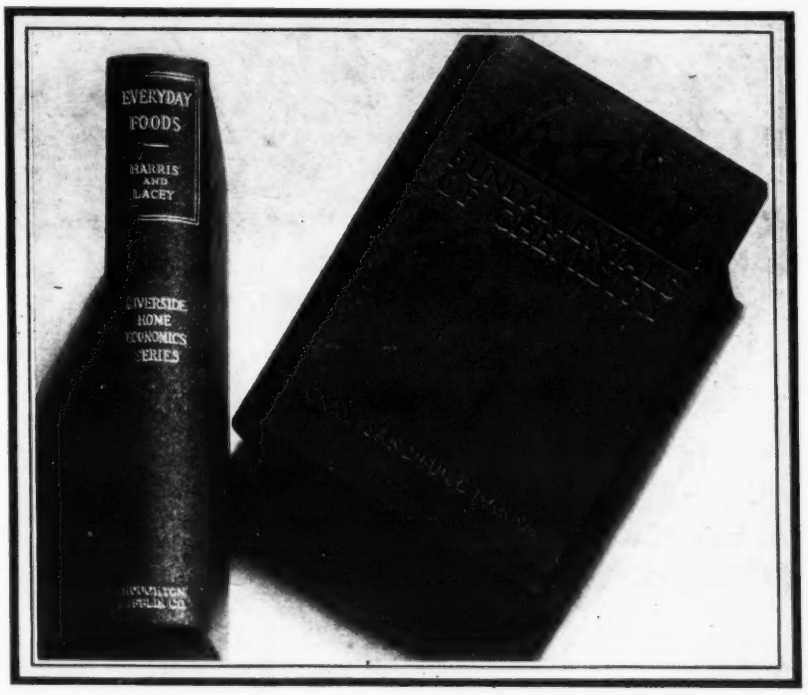
Booklet "S1929" describing the **NOVLFLEX** *setting will be mailed on request.*

NOVELTY SCENIC STUDIOS
340 WEST 41ST STREET, NEW YORK CITY

TEXT BOOKS

published by Houghton-Mifflin and bound in genuine du Pont

FABRIKOID



Photograph through courtesy of Houghton-Mifflin Company, Boston, Mass.

Text-books see the roughest of service. Knocked about, scuffed, their edges damaged by straps, they are a constant drain on the equipment budget.

Durable du Pont FABRIKOID is an armor against this hard usage. Text-book buyers everywhere are finding it good economy to specify "du Pont FABRIKOID bindings" when ordering new books or replacing old ones. For FABRIKOID is built strong—to withstand the ceaseless punishment that text-books must absorb. And it is a beautiful material of many colors and patterns.

Du Pont FABRIKOID is washable. Washing with soap and water instantly removes spilled ink, fingerprints, smudges and other soil. The original color and beauty of FABRIKOID is restored. And the books remain in service as fresh and clean as new.

We cordially invite Principals, Teachers, and Board of Education members to correspond with our Text-book Department which will give prompt attention to every inquiry.

E. I. DU PONT DE NEMOURS & CO., INC.
Fabrikoid Division
NEWBURGH, N. Y.
Canadian Subscribers address: Canadian Industries Limited, Fabrikoid Division, New Toronto, Ontario, Canada.

DU PONT FABRIKOID
REG. U.S. PAT. OFF.

FABRIKOID

MAKES COVERS SAY "ATTENTION!"

It's Best For Assembly Halls and Classrooms

U. S. NAVY has been using HOLMES PROJECTORS for years. Almost 200 now in service.

In the Film wear tests for U. S. Navy, Holmes Projectors more than doubled the number of runs required.

LOW IN PRICE

yet projects a 10 ft. x 14 ft. picture up to 100 ft., equal in quality and definition to pictures shown in moving picture houses.

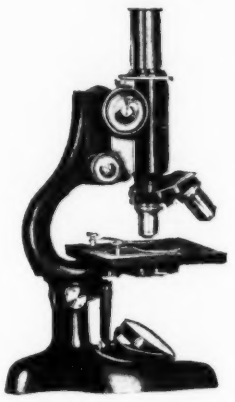
15 DAYS' FREE TRIAL

Compare it with any other make; if not perfectly satisfactory return it and your money will be cheerfully refunded. Many exclusive mechanical features, in point of ease of operation, long-life safety, adjustable take-up, focus adjustment, simplicity throughout. IT HAS NO EQUAL. That's why the United States Navy is using Holmes Projectors. 51 being used by Hollywood's most famous celebrities, directors and producers. Professional quality with portability. Weight 44 pounds. Can be operated from any light system, farm lighting included.

Write for interesting details

HOLMES PROJECTOR CO.
1813 Orchard St. Chicago, Ill.

For Students



The Popular FS Microscope

The most popular and extensively used microscope by high school and college students for biological work is the FS Model. Special equipment gives it a range of magnifications adequate to meet the requirements of work in the scholastic laboratory. Easy to manipulate and of sturdy construction. It is an excellent instrument for the student unused to handling a microscope.

There is a series of FS Models, some are entirely adequate for elementary work, others are adapted for more critical observations.

Write for complete information on these models.

Bausch & Lomb Optical Co.
680 St. Paul Street Rochester, N. Y.

PUBLICATIONS RECEIVED

Health Education Tests

Monograph 1. Paper, 70 pages. American Child Health Association, New York. This monograph provides the technical data and the theoretic standardized-testing basis used in a school-health study carried on in 1928–29 by the Association. The actual content of the tests is not disclosed, except insofar as extracts are given to indicate how the technique was applied. If Table VI indicates the relative attention given to fifteen items included in the subject matter of the tests, it would seem that the opinion of four judges was far more of a guide in the determination of the test content than the objective findings in courses of study and similar materials.

U. S. Government Master Specifications for Drawing Paper

Specification No. 595. Contains specifications and technical requirements for Whatman, white, buff or cream, and students' drawing paper. A copy may be obtained from the specifications board, Bureau of Standards, Washington, D. C.

U. S. Government Master Specifications for Drawing Instruments

Specification No. 593. Contains the specifications for drawing pens, compasses, dividers, bow pencils and pens, and for parts of compasses. A copy may be obtained from the specifications board, Bureau of Standards, Washington, D. C.

U. S. Government Master Specifications for Printed Tracing Cloth

Specification No. 592. Contains specifications for cross section, legarithmic, and profile tracing cloth. A copy may be obtained from the specifications board, Bureau of Standards, Washington, D. C.

One Hundred Fifty Questions and Answers on the Constitution of the United States

Compiled by Leon O. Smith. Paper, 16 pages. Printed by the Technical High-School Printshop at Omaha, Nebr.

Marriage and Divorce

1927. U. S. Department of Commerce, Bureau of the Census, Washington, D. C. Detailed statistics for the United States and for each of the 48 states.

Plays, Poems, and Prose

Prepared by Mr. M. R. Keyworth, superintendent of schools, Hamtramck, Mich. An illustrated booklet containing some of the products of the creative work of the public-school children. Its worth lies in the evidence that it presents methods of teaching that may be of help in stimulating creative endeavor. The pamphlet is issued by the board of education of Hamtramck, Mich.

Wood Floors

Paper, 32 pages. Published by the National Lumber Manufacturers' Association, Washington, D. C. A study of the possibilities of wood floors that will be found both useful, economical, and artistic.

Public Recreation Facilities

An analysis of the construction and operating costs of selected public recreation facilities in sixty American cities. Prepared and issued by the Playground and Recreation Association of America for August, 1929, of New York City. The Playground Association has been rendering a large service to public and private authorities in the problems of public recreation in presenting this special issue the results of a national survey of the cost of constructing and operating outdoor swimming pools, bathing beaches, wading pools for children, tennis courts, field houses for playgrounds, playground shelters, athletic fields, baseball grounds, and grounds for winter sports.

The data are adequate for giving public authorities an insight into the real situation in each of the sixty cities which cooperated. It is more than likely that many of the figures are not exactly comparable, because of differences in accounting methods and support.

Directed Study Guides for Knowlton's Introduction to World Geography

By Alma Leonhardy, Grace W. Hogoboom, and Elizabeth Van Patten. Paper, 64 pages. Price, 48 cents. The Macmillan Company, New York City.

This study guide is adapted for use in the fifth and sixth grades. It is complete, detailed, and teachable.

The Use of Scales for Rating Pupils' Answers to Thought Questions.

By C. W. Odell. Paper, 34 pages. Price, 50 cents. Bulletin No. 46, 1929, issued by the University of Illinois, Urbana. This pamphlet presents the results of a study undertaken to determine the possibility and desirability of constructing and using scales for rating pupils' answers to questions in other school subjects than those named. The report outlines the various steps involved in conducting the study and offers an analysis of the various kinds of thought questions employed in secondary schools.

In the study, five or six questions of each of the nine types in each of the four high-school subjects were prepared and distributed to more than one hundred different high schools. Out of a total of 23,500 pupils' answers, 36 sets of 100 answers, that is, a set of answers to one question of each type in each subject, were selected by a preliminary reading. The sets were rated by several persons and 11 answers were selected from each set. Each of the answers were prepared and each set of 11 answers with the criticisms concerning them were combined to form a scale. About 60 different persons then rated the pupils' answers to questions not included in the scales, in order to determine which method of procedure was the more reliable.

Extension Methods and Their Relative Effectiveness. By M. C. Wilson. Paper, 47 pages. Technical Bulletin No. 106, February, 1929, issued by the U. S. Department of Agriculture, Washington, D. C. The bulletin gives the results of studies conducted in fourteen states and presents data from more than 10,000 farms. The report points out that organized extension work has been under way in the counties for varying lengths of time when the field data were collected. The number of resident extension agents in the counties varies from one to three or more, and in some states assistance is afforded by specialists from the college. From the information obtained, it is evident that, although the percentages of farmers and homemakers influenced by extension to adopt improved practices are relatively high in all the areas studied, the range from 64 to 97 per cent represents a 50-per-cent difference in accomplishment. In agricultural practices only, the percentage of farmers influenced varies from 59 to 96. The data presented shows the value of the different means and agencies employed in extension, as these tools have been and are being used by a representative group of extension workers under a wide range of conditions. The material deals with the practical application of teaching methods in the field, and not with the theoretical value of the methods under ideal or laboratory conditions. The chief result of the work has been the establishing of confidence in the recommendations of the extension service rather than to teach better practices directly to a large number of people. It was brought out that, unless the character of the extension program during a period of years is such as to touch vitally a high percentage of the farms and homes, the possibility of a great influence on the practices of large numbers of people is greatly limited.

Begin the Fall Term Right by Using

THE TRANS-LUX AIR-COOLED OPAQUE PROJECTOR

CONCEDED—

the best opaque projector on the market.

It is so efficiently cooled by a suction blower that sufficient wattage is used to give excellent opaque projection, —under daylight conditions with the Trans-Lux Daylight Picture Screen. Heretofore, opaque projectors using 1000 Watts burnt the projected material. Our projector does not even scorch this material.

REMEMBER—

Opaque projection makes all picture material in current publications, sketches, post-cards, etc., immediately available for projection.

Pupils are always on the look-out for projection material.

This equipment has become indispensable for teaching Art Appreciation.

It is now equipped with handles, which add considerably to its portability.

Upon ordering, please be sure to specify current on which projector will be operated.

Further particulars will be sent upon request.

TRANS-LUX
DAYLIGHT PICTURE SCREEN CORP.
247 Park Avenue New York, N. Y.

GIVE THE DRAMA CLUB

BEL SUN LITE

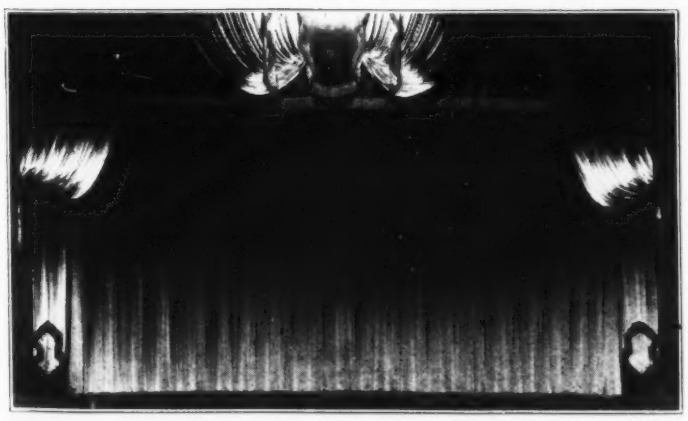
Under Bel-Sun-Lite amateur effort rises to professional heights. To make this season's plays a complete success, equip your auditorium or assembly hall with Bel-Sun-Lite.

Our representatives are listed in the classified telephone directories of these cities. Consultation with them invited.

Atlanta, Ga.	Los Angeles, Calif.	Rochester, N. Y.
Buffalo, N. Y.	Miami, Fla.	St. Louis, Mo.
Delaware, O.	Minneapolis, Minn.	San Antonio, Tex.
Ft. Worth, Tex.	New Orleans, La.	San Francisco, Calif.
Gary, Ind.	Omaha, Neb.	Seattle, Wash.
Houston, Tex.	Pittsburgh, Pa.	Tampa, Fla.
Indianapolis, Ind.	Philadelphia, Pa.	Tulsa, Okla.
Kansas City, Mo.	Richmond, Va.	Winnipeg, Man., Can.

Belson Manufacturing Co.
808 Sibley St. Chicago, Ill.

"SCENERY of Distinction"



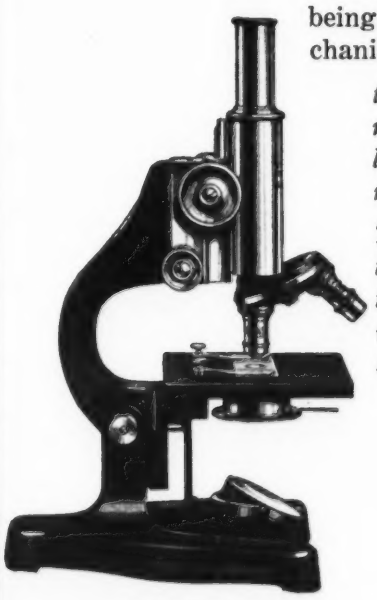
Draperies and Stage Riggings
Particularly adapted to School Dramatics

THE CHICAGO STUDIOS
A CORPORATION
State - Lake Bldg. Chicago

THE NEW YORK STUDIOS
328 W. 39th St. New York City

LEITZ

New School Microscopes



MODEL "LL"

Aside of the Leitz Microscopes being endowed with superior mechanical and optical features,

the Model "LL" is now furnished with a stand of enlarged design and extreme ruggedness.

The culmination of such features assures any school of the best serviceable equipment when a Leitz Microscope is selected.

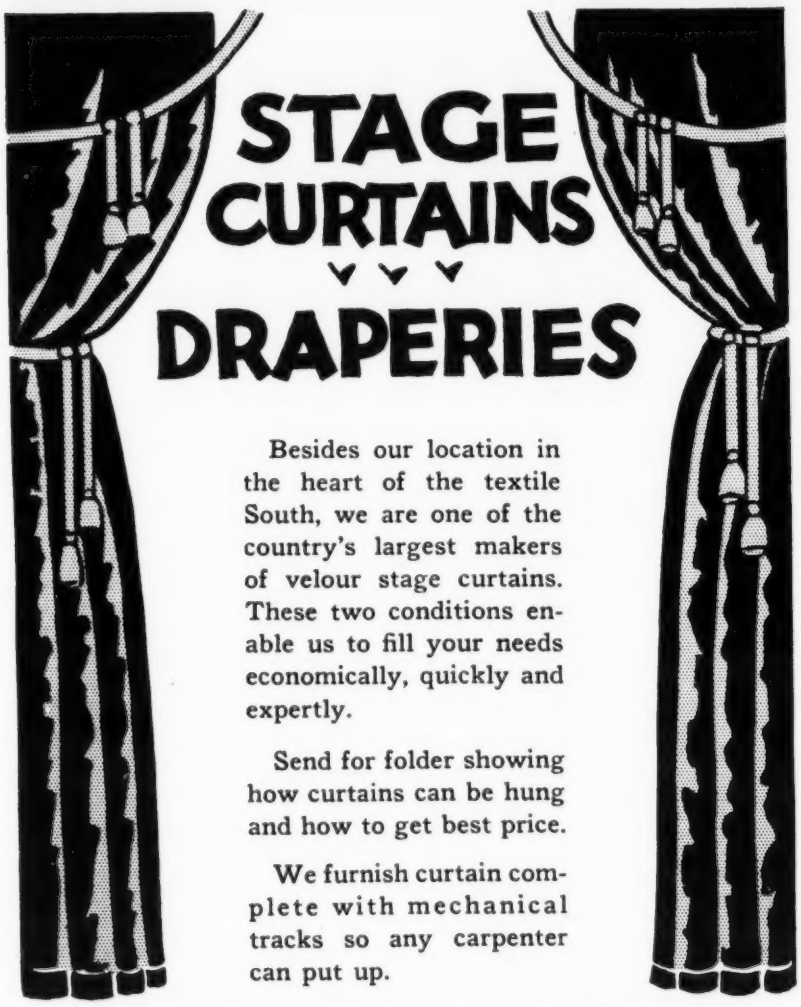
***The prices for these new constructions have not advanced;* they range, depending upon the equipment,**
from $47.75 to $113.50.

We grant a 10% discount to educational institutions.

WRITE FOR PAMPHLET NO. 1168 (DD)

E. LEITZ, Inc.
60 EAST 10TH STREET, NEW YORK, N. Y.

BRANCHES:
Pacific Coast States: Spindler & Sauppe, Offices at San Francisco and Los Angeles, Calif.
Chicago District: E. Leitz, Inc., 122 So. Michigan Ave., Chicago, Ill.
Washington District: E. Leitz., Inc., Investment Bldg., Washington, D. C.



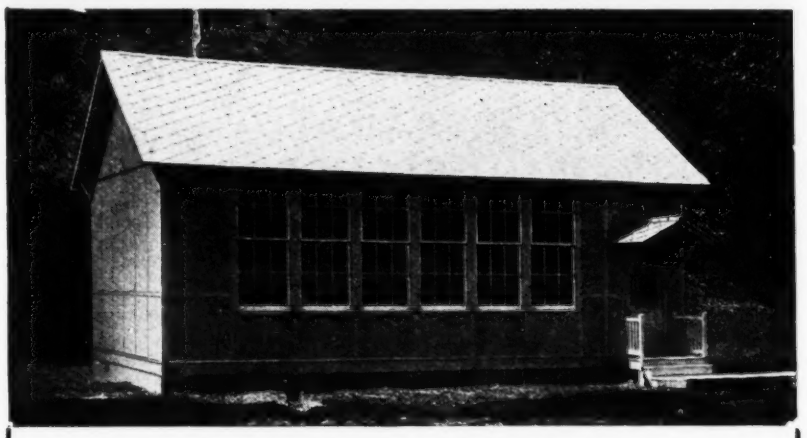
STAGE CURTAINS
DRAPERIES

Besides our location in the heart of the textile South, we are one of the country's largest makers of velour stage curtains. These two conditions enable us to fill your needs economically, quickly and expertly.

Send for folder showing how curtains can be hung and how to get best price.

We furnish curtain complete with mechanical tracks so any carpenter can put up.

STANDARD DECORATING CO.
MFGRS.
GREENVILLE, S. C.



SAFETY ALWAYS!

Obviously, this is the motto of conscientious parents when making purchases for their children. This, also, should be the motto of the school board who is faced with the serious problem of the type of structure they shall select when planning added schoolroom facilities.

The important questions of fire-safety, lighting and heating, ventilation, practicability, and permanence in school-house construction have long been considered by experts. All these features are embodied in this 100% SAFE, asbestos building which has every advantage of a masonry structure, but is without that enormous and unnecessary cost.

Write us for the informative catalog which gives details in full.

Asbestos Buildings Company
Dept. J
Liberty Title and Trust Co. Bldg., Philadelphia, Pa.

AMBLER
FIREPROOF ASBESTOS SCHOOLHOUSES

VITEK Automatic Adjustable STEEL STOOLS

Ideal for laboratories, art and mechanical drawing classes, cafeterias. Easily raised to any desired height . . . *in one second!* Simply lift up on seat and it locks in place! Three and four legged styles . . . with or without comfortable back rest and adjustable foot rest. Choice of 20 models! Finest steel. Attractive finish.

New Catalog on Request

VITEK MANUFACTURING CO.
Dept. 103 **Omaha, Nebr.**

MURDOCK
Drinking Fountains and Fixtures

593 Cities and Towns have installed Murdock Outdoor Bubble Fonts in the past seven years. Most of these have gone into schoolyards.

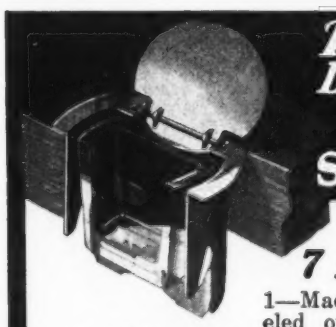
Does not freeze. Operates satisfactorily winter and summer. Inner works entirely of brass and removable without digging up. Bowl and bubbler head solid bronze, chromium plated—everlasting bright finish.

Made of BRONZE, BRASS and IRON, this Font stands up under the most severe conditions of service. Either angle stream or vertical bubbler.

Write for Booklet "A REMARKABLE OUTDOOR DRINKING FOUNTAIN."

Complete line of drinking fountains and fixtures described in our catalogue No. 106.

THE MURDOCK MFG. & SUPPLY CO.,
426 Plum St., Cincinnati, Ohio



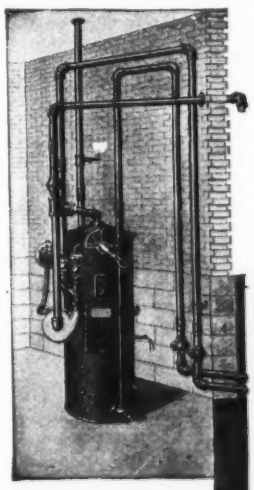
Insist that Your New Desks be Equipped with
TANNEWITZ SANITARY INK-WELLS

They Possess 7 Definite Superiorities

1—Made of heavy material—heavily nickeled or rubberized to prevent corrosion. 2—Unbreakable. 3—Spring barrel protects glass ink container. 4—Unaffected by the shrinking or swelling of desk tops. 5—Locks permanently in desk. 6—Glass ink container has no lugs to chip or break off and is easy to clean. 7—Economical—holds just the proper amount of ink—not enough to become thick and unusable.

Write for free sample for inspection.

THE TANNEWITZ WORKS
FRONT AVE., GRAND RAPIDS, MICH.



ELECTRICALLY OPERATED, AUTOMATIC GAS MACHINE

Requires No Attention

Write to us for list of colleges and high schools using our machine. Illustrated Catalogue Will Be Sent on Request.

MATTHEWS GAS MACHINE CO.
6 E. Lake Street **CHICAGO, ILL.**

This Machine Will *Automatically* Produce

GAS

For your laboratories and Domestic Science Department.

In use in hundreds of educational institutions throughout the country.

MANUAL TRAINING BENCH No. 280

A GLANCE AT THIS NEW PATTERN will show that the combination of various sized drawers and cupboard makes an unusually practical bench. Notice, especially, the small drawer which is intended to hold nails, screws, small tools, etc., which so easily become misplaced when kept with the larger tools. Being able to immediately lay hands on these small but necessary items, will be the means of saving a great deal of time, thereby promoting efficiency. Also, notice the large cupboard, which will hold such tools and materials which cannot be kept in the general or three private drawers. Bench is equipped with our Abernathy Rapid Acting Roller Nut Vise No. 70D on front, adjustable stop and dog.

C. CHRISTIANSEN

Manfacturer of this line since 1898

2814-2842 West 26th St., Chicago, Ill.

STEELE'S
METAL ROLLERS

O. C. Steele's All Steel Rollers
Standard Equipment
Steele's Duck Shades

Three of the 15 Varieties

Oldest Makers of Duck Shades
Largest Stock—Lowest Prices
Best Quality—Quickest Service

Write for information

OLIVER C. STEELE MFG. CO. DUCK SHADES SPICELAND, IND.

A Real Factory — Not an Assembling Plant

SQUIRES INKWELLS

We manufacture the Boston Inkwell in three different styles. All have hard rubber tops and the glasses fit either style of top. These fit 1 27/32 inch holes.

SQUIRES No. 58
BOSTON INKWELL

SQUIRES No. 59
BOSTON INKWELL

SQUIRES No. 60
BOSTON INKWELL

SQUIRES No. 12
COMMON SENSE INKWELL

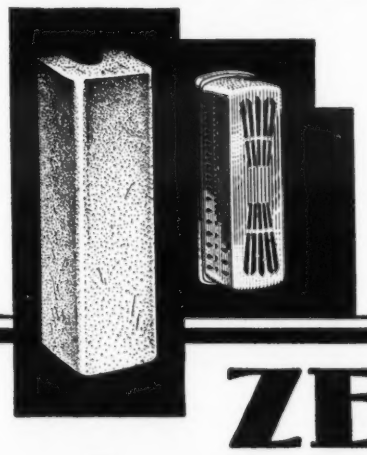
Our No. 12 or Common Sense Inkwell is made in three sizes, to fit holes 1½", 1¾" or 1⅞". Corks with Caps or Rubber Corks furnished at same price.

We make several other styles of inkwells.

Write for Catalogue, Prices, and Samples.

SQUIRES INKWELL COMPANY

Brady Bldg., Third Ave. and Ross St., PITTSBURGH, PA.



PURIFY THE AIR!

ZEF-IR
deodorizing products

THE crowded conditions of modern life demand Zef-ir—a scientifically constructed deodorant that *actually purifies the air as well as sweetens it.*

Zef-ir products are put up in various forms—Zef-ir Blocs and Zef-ir Crystals for general use and Zef-ir Blockettes for urinals. *Ask for samples.*

The Huntington Laboratories, Inc.

Huntington, Indiana

HUNTINGTON LABORATORIES

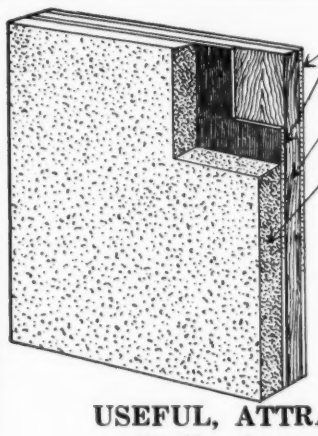
PROFESSIONAL SCHOOL SERVICE DIRECTORY

SCHOOL FINANCING
For the past twenty years we have specialized in the purchase of School Bonds.
We furnish blank bonds, prepare proceedings and attend to all legal details relating to proposed bond issues.
If you contemplate New School Financing Write us Today
THE HANCHETT BOND CO.
39 So. LaSalle St. Chicago, Ill.

CHARLES FOSTER
Member A. S. M. E.—A. S. H. & V. E.
CONSULTING ENGINEER
Heating, Ventilating, Plumbing and Lighting for Schools.
Professional Service for Architects.
512 Sellwood Bldg., Duluth, Minn.

HAYNES & MASON
SCHOOL ARCHITECTS
PARK BLDG.
FITCHBURG MASS.

PERKIN'S
CURTAIN CARRIER
for
Schools and Theatres
140
School Auditoriums in the City of Chicago use Our Curtain Carrier
Write for Descriptive Folder Today
PERKINS CURTAIN CARRIER CO.
WATERLOO, IOWA



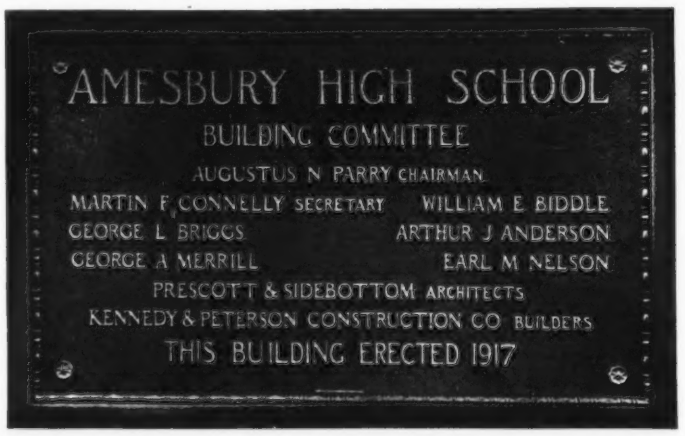
"STANDARD" CORK Bulletin Board
THE BEST BY ANY TEST
Practical for display purposes in halls and over blackboards in schoolrooms. Easily installed in old or new buildings.
USEFUL, ATTRACTIVE and PERMANENT
We Manufacture All Sizes. Write for Sample.
STANDARD BLACKBOARD CO.
Cor. Second and Walnut Sts. ST. LOUIS, MO.

Why don't you purchase the best goods for your school? Our revolving blackboards and roll blackboards have been in constant use in all the Public Schools in New York, and the principal cities for thirty-six years, which is a sufficient guarantee. Send for our illustrated catalog and discount sheet and compare prices with other manufacturers.

N. Y. Silicate Book Slate Co.
20-22-24 Vesey Street
NEW YORK

THE IMPROVED "CLICK SYSTEM" "MASTER SPECIAL" KEYLESS PADLOCK
An Achievement in Economy and Utility. Made up special for Lockers and Boxes, *in any degree* of security required.

The intense popularity of this padlock for School installations is due to its exceptional service features—economy, durability, efficiency and convenience. It is operable in the dark as readily as in the light—a feature essential to successful performance on lockers. Developed through years of intensive study of the special requirements of locker systems in schools.
Installations of "Click System" padlocks ranging from 50 to over 30,000 are achieving real Service—usually paying small initial cost in saving on lost keys. Buy experience and service—it's cheaper.
Cut about ½ actual size.
Sample and Special proposition to Operating School Officials on Request.
THE J. B. MILLER KEYLESS LOCK CO.
KENT, OHIO, U. S. A.



HONOR ROLLS—MEMORIAL TABLETS—IN BRONZE
MODELED, CAST AND FINISHED BY
ALBERT RUSSELL AND SONS CO.
125 MERRIMACK ST. NEWBURYPORT, MASS.

COMPLETE STAGE EQUIPMENT

TIFFIN Scenic Studios
TIFFIN, OHIO

SEND FOR CATALOGUE

Palmer's Hy-Test Service Products

Are the Standard of Those Who Know

Send for Your Copy of this Catalog of Standard-ized Products

PALMER PRODUCTS, INC.
Waukesha, Wis., U. S. A.

Vacuum Eraser Cleaners
Soaps—
Chemicals—
Sanitary Supplies

Eureka Cork Bulletin Boards

A Chemical Laboratory in the new De Witt Clinton High School — New York City, showing Eureka Cork Bulletin Boards above and at the side of slate blackboard.

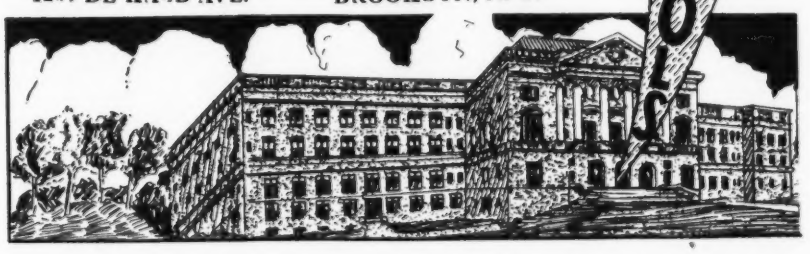
SERVICE, QUALITY, AND PRICE testify the national popularity of this exceptional product.

Many of the schools equipped with EUREKA CORK BULLETIN BOARDS represent the finest specimens of modern school construction in the United States.

USED IN MORE THAN 3000 MODERN SCHOOLS

Samples of Tan and Green Eureka Cork and descriptive folder sent on request.

PADDOCK CORK COMPANY
1209 DE KALB AVE. BROOKLYN, N. Y.



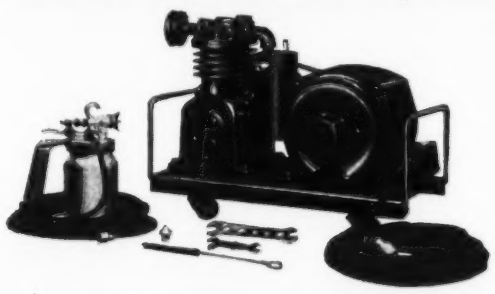
"the official" waste-basket

In seventy-eight per cent of the schools of America, Vul-Cot is standard equipment . . . Solid at sides and bottom, so that not even the smallest particles can sift through onto the floor . . . Made of National Vulcanized Fibre—a material that is practically indestructible . . . Guaranteed for five full years of service.

NATIONAL VULCANIZED FIBRE COMPANY
Wilmington, Del., U. S. A

VUL-COT
-the national wastebasket

The Ideal Spray Outfit for School Maintenance



This DeVilbiss ½ HP Spray-Painting Outfit, Type NK-601, provides ample capacity for all small volume painting, decorating, and refinishing work in and on school buildings. It handles a wide variety of materials. It is easily portable, weighing but 115 pounds, and mounted on ball-bearing casters. It is entirely complete and ready to work when plugged into any light socket. The price is but $132.00.

Write for catalog showing DeVilbiss outfits in many larger and smaller models for every painting and finishing operation.

THE DEVILBISS COMPANY
268 Phillips Ave.
TOLEDO, OHIO

SALES AND SERVICE BRANCHES

NEW YORK PHILADELPHIA CLEVELAND
DETROIT INDIANAPOLIS CHICAGO ST. LOUIS
SAN FRANCISCO WINDSOR, ONT.

Direct Factory Representatives in all other Territories

DeVilbiss Spray-Painting Finishing System

THE NATIONAL ASSOCIATION •• OF TEACHERS' AGENCIES ••

For Professional Teacher Placement Service

Albany Teachers' Agency, Inc.
74 Chapel Street, Albany, N. Y. Est. 1885
Provides Schools and Colleges with Competent Teachers
Assists Teachers in Securing Positions.
Willard W. Andrews, President — F. Wayland Bailey, Secretary

The Educators' Bureau
W. A. Myers, Manager
322 Occidental Bldg. Indianapolis, Ind.
Efficient, professional, placement service for TEACHERS and SCHOOL OFFICIALS
No advance fee — No charge to school officials

The Rocky Mt. Teachers' Agency
410 U. S. Nat. Bank Bldg. Denver, Colo.
Wm. Ruffer, Ph. D. Manager
Branch Office
Lumber Exchange Bldg. Minneapolis, Minn.

Bryant Teachers Bureau, Inc.
711 Witherspoon Building, Philadelphia
1759 Salmon Tower, New York City
OUTSTANDING PLACEMENT SERVICE

Interstate Teachers' Agency
T. H. Armstrong, Mgr.
500 Duffy-Powers Building Rochester, New York
Placed teachers in twenty-six different states last year.
Twenty years experience. Write for information

Sabins' Educational Exchange
36 years of successful experience in teacher placement work
Prompt, Efficient and Reliable Service
412 Shops Building Des Moines, Iowa
E. T. HOUSH, Manager
ANNA ALLEE, Assistant Manager

The Cary Teachers' Agency
36 Pearl Street, Hartford, Conn. — 14 Beacon Street, Boston, Mass.
Our business is done by *recommendation* in answer to *direct calls* from employers

The Midland Schools Teachers' Agency
308 Peoples Savings Bank Bldg.
Des Moines, Iowa.
Situated in the heart of the land of opportunity for teachers.
H. A. Mitchell, Proprietor

Schermerhorn Teachers' Agency
Established 1855
CHARLES W. MULFORD, Prop.
366 Fifth Ave., between 34th & 35th Sts. NEW YORK.
Branch Offices: 1086 Union Trust Bldg., Pittsburgh, Pa. 1836 Euclid Ave., Cleveland, Ohio.
A Superior Agency for Superior People. We Register Only Reliable Candidates. Services Free to School Officials.

"Distinguished Personnel Service"
CLARK-BREWER TEACHERS' AGENCY
FLATIRON BUILDING NEW YORK CITY
E. L. GREGG, Mgr.
SIX OFFICES—One Registration for ALL

The Parker Teachers' Agency
26th Year
State licensed and regulated
George R. Ray, Manager
14 So. Carroll St. Madison, Wis.

Southern Teachers' Agency
Columbia Chattanooga Richmond Louisville Memphis
Continuous registration in four offices
No advance fees
Covers Middle Atlantic, South and Middle West

"OBCO" STEEL FLAG POLES

They are storm and lightning proof, smooth and straight, last a lifetime, cost less than wood poles.

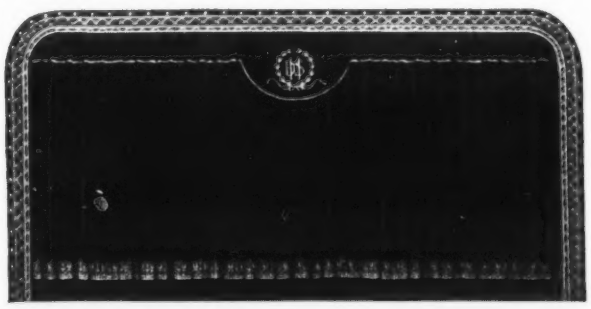
Our flag poles are constructed of steel pipe sections, telescoping into each other and held in place with steel pins, thereby making a tight and rigid joint.

Erection is very simple, and with the full directions furnished by us anyone can do it.

WRITE FOR CIRCULAR AND PRICES.

OTTO BIEFELD COMPANY
118-206 N. Water St. Watertown, Wisconsin

STAGE EQUIPMENT
For
Schools — Auditoriums — Colleges
Years of Experienced and efficient methods are at your command.
Full particulars will be gladly sent you.
Draperies — Scenery — Rigging
I. WEISS & SONS
508 W. 43rd St. NEW YORK CITY



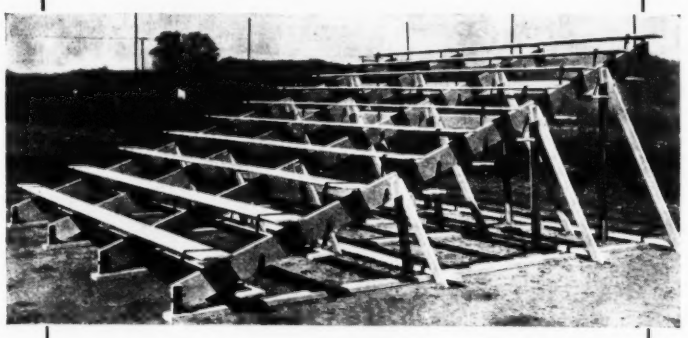
VELOUR CURTAINS AND CYCLORAMAS
STAGE SCENERY
The Wm. Beck & Sons Co.
Established 1858
2104-2110 Highland Ave. Cincinnati, Ohio

An excellent Home Economics text
Fundamentals of Sewing
By Carrie Crane Ingalls
A real text on sewing—a book which outlines a comprehensive course, contains a complete series of carefully graded class assignments, and still goes into every detail. For teachers who are seeking a practical detailed statement of the fundamentals of sewing.
Cloth, 184 pages. Price, $1.60.
Send for a copy on approval!
The Bruce Publishing Company
New York MILWAUKEE Chicago

PERMANENT — *yet* PORTABLE

BLEACHERS

For indoor and outdoor use . . . safe, speedy and economical.



At lower prices, Minter Bleachers give you better construction, easier erection, more safety and more convenience. Many new and exclusive improvements. Can be used anywhere without damage to property. Easily erected, easily dismantled, and stored in very small space. **The best bleacher value!**

WRITE

MINTER HOMES CORPORATION
BLEACHER DEPARTMENT
HUNTINGTON, WEST VIRGINIA

Also : Minter Portable Schools and Gymnasiums

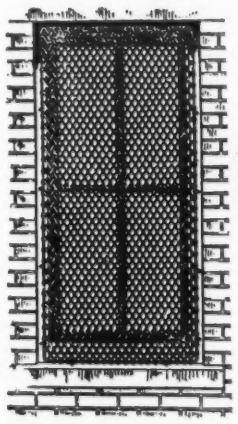
Approved by 5000 Schools!

FREE TRIAL
To schools unfamiliar with our brushes, we will send one for 30 days free trial to be paid for only if found entirely satisfactory. Write for one today.

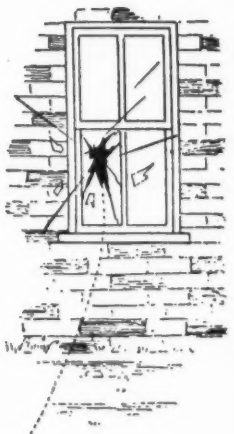
The Dustless Brush eliminates all sweeping compound and floor oil; 97% of the dust (which contains deadly disease germs), and 90% of the usual dusting.

School officials, making a study of their sweeping problems, now realize (1) that sweeping compound and floor oil holds dirt to the floors instead of releasing it, and (2) that sweeping without a Dustless brush contaminates the air with thousands of deadly disease germs. Let us send you a trial brush!

MILWAUKEE DUSTLESS BRUSH CO.
102 - 22nd STREET MILWAUKEE, WISCONSIN



BUY GUARDS NOT GLASS



For PERMANENT PROTECTION against damage by accident and prevent tramps and other undesirable persons from entering buildings through windows.

ORDER FROM YOUR JOBBER

BADGER WIRE & IRON WORKS
Cleveland and Twenty-sixth Avenues
MILWAUKEE ... WISCONSIN

Hand-Made Cast Bronze
SCHOOL TABLETS

"Equal to the best" genuine bronze tablets, memorial honor rolls, plaques, trophies and nameplates. *Write for our new 64-page catalog.*

The Newman Mfg. Co.
NORWOOD P. O. CINCINNATI, O.

TEACHER AGENCIES

Fisk Teachers Agency — 28 East Jackson Blvd. — Chicago
Address Dept. L
C. E. Goodell, President and General Manager
Selective Service ranging from Primary Teachers to College Presidents. School officials as well as teachers will find the personal, sympathetic understanding of their needs a valuable enlargement of the recognized proficiency of this Agency. Write for details.

FISK TEACHERS' AGENCY
Associated with E. O. Fisk Agencies
1020 McGEE ST.
KANSAS CITY, MO.
J. A. DEVLIN, MANAGER

WESTERN REFERENCE AND BOND ASSOCIATION
John W. Million, A. M., Pres. and Mgr.
A TEACHERS' PLACEMENT BUREAU
Any Position Anywhere
228 Mfrs. Exc. Bldg.
8th and Wyandotte
KANSAS CITY, MO.

Thurston Teachers' Agency
Established 1890
224 South Michigan Avenue, Chicago

MID-NATION TEACHERS' SERVICE
6625 DELMAR BOULEVARD
ST. LOUIS, MO.

SINCE 1917 we have endeavored to render efficient service in filling grade, high school and college vacancies; also administrative positions. Vacancies from any state appreciated. Sincerely, H. D. Yates, Mgr.

TEACHERS WANTED
For Schools and Colleges
NATIONAL TEACHERS AGENCY, Inc.
D. H. Cook, Gen. Mgr., Philadelphia, Penna.
Other Offices: Syracuse, N. Y.; Cincinnati, O.; Northampton, Mass.; Memphis, Tenn.; Pittsburgh, Penna.; New Haven, Conn.

ALBERT Teachers' Agency
Established 1885
25 East Jackson Blvd., Chicago
535 Fifth Avenue, New York
Peyton Bldg., Spokane, Washington
York Rite Temple, Wichita, Kansas
Still under same active management. Best Schools and Colleges permanent clients. Best qualified men and women on our available list. Prompt service.

THE CONTINENTAL TEACHERS' AGENCY
BOWLING GREEN, KENTUCKY
has for thirty-six years been serving school officials and teachers in every state in the Union.

JACKSON TEACHERS' AGENCY 29 WEYBOSSET STREET PROVIDENCE, R. I.
Worthwhile opportunities for able teachers.
CLARA I. BINNING, Manager.
For many years familiar with placement problems.

THE EDUCATORS' EXCHANGE
ALLIED PROFESSIONAL BUREAUS
We recommend superior teachers for the better positions in colleges, public and private schools.
Communicate at once if you need teachers.
MARSHALL FIELD ANNEX BUILDING
25 E. Washington St., Chicago, Ill.

COLLEGE GRADUATES recommended exclusively —except in vocational fields. No elementary school position. Any subject from high school up. Leading bureau for teachers of Commercial, Industrial, and Physical Education. 26th year. Covers all states. Tell us your needs
SPECIALISTS' EDUCATIONAL BUREAU
ROBERT A. GRANT, Pres.
320 N. Grand, St. Louis, Mo.

FIRE ESCAPES
Standard Conveyor Spiral Fire Escapes
Handle the most people in the shortest time.
Eliminate congestion.
Cost very little.
Look well.
Are in use throughout the United States.
Have stood the test of years.
Send for Catalog N.
STANDARD CONVEYOR COMPANY
North St. Paul, Minn.

CLASSIFIED WANTS

The rate for Classified Advertisements is 10 cents per word per insertion, payable in advance. Forms close the 15th preceding the date of issue.

POSITIONS OPEN

Salesmen to call on School Officials in an effort to rent or sell Graduation caps and gowns and to sell School band uniforms; can work on full or part time basis; can handle as side line if preferred. Full particulars on request. The C. E. Ward Company, New London, Ohio,

Wanted, Salesmen—The Trippensee Planetarium is being Nationally Advertised and we would like to secure salesmen throughout the country who have been selling the school systems to sell our products. Good commissions. Write for our proposition. **Trippensee Planetarium Co., Saginaw, Michigan.**

POSITIONS OPEN

Wanted—Teachers with advanced degrees and experience for all departments of colleges and high school work. The Interstate Teachers' Agency, 302 Balter Bldg., New Orleans, La.

POSITIONS WANTED

Aznoe's School Nurses Include: (A) R.N., age 38, about twelve years' public health, school and social service experience, seeking Minnesota opening at $150. (B) R.N., age 34, extensive experience as school nurse, desiring appointment in South, Florida preferred, at $175. **No. 2553, Aznoe's Central Registry for Nurses, 30 North Michigan, Chicago.**

SCENERY

COMPLETE STAGE EQUIPMENT

Velour Curtains — Cycloramas
Draperies

"IF IT'S USED ON A STAGE—WE CAN FURNISH IT"

ACME SCENIC STUDIOS
2919-21 W. Van Buren St. Chicago, Ill.

STAGE SCENERY

VELOUR CURTAINS

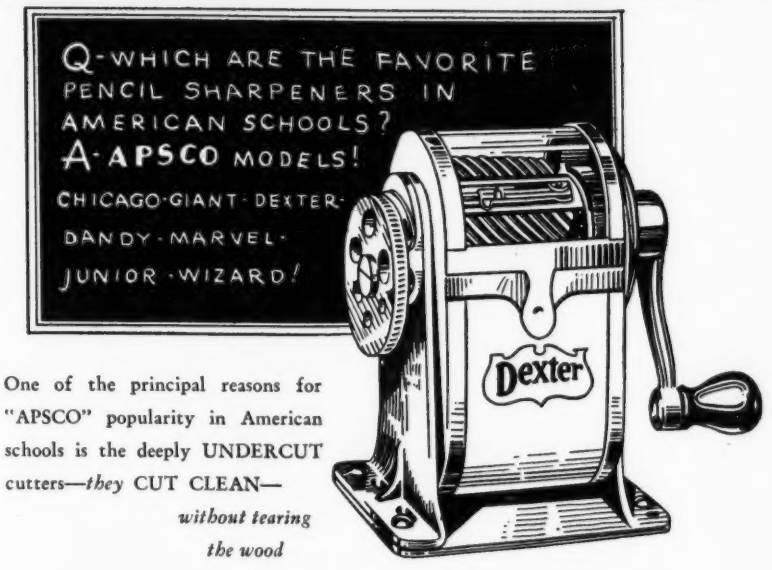
CYCLORAMAS

UNIVERSAL
SCENIC STUDIO, INC.
378-380 FIFTH ST.
MILWAUKEE

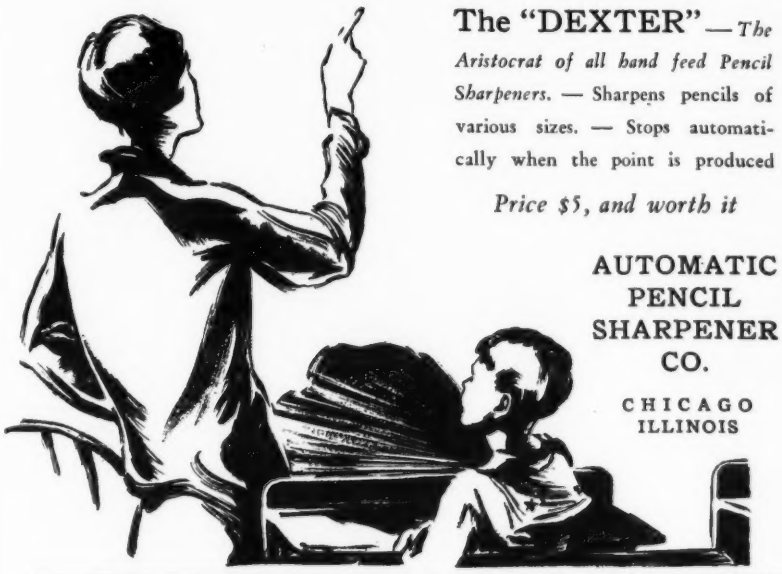
Any One of Our Representatives Will Answer Your Request for Information

C. M. SHEPLEY
Minneapolis, Minn.

W. B. CLINARD
Winston Salem, N. C.



One of the principal reasons for "APSCO" popularity in American schools is the deeply UNDERCUT cutters—*they* CUT CLEAN—*without tearing the wood*



The "DEXTER" — *The Aristocrat of all hand feed Pencil Sharpeners.* — Sharpens pencils of various sizes. — Stops automatically when the point is produced

Price $5, and worth it

AUTOMATIC PENCIL SHARPENER CO.
CHICAGO
ILLINOIS

Letterheads and Envelopes

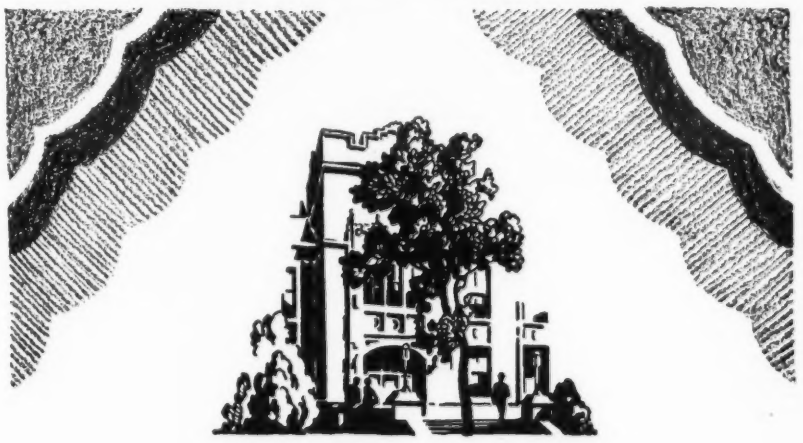
The Famous Brother Jonathan Bond
125 of Each in Box

$5.00 POSTPAID

Limited to three lines small Gothic type

Send remittance with order

CANNON PRINTING COMPANY
129 E. Michigan Street MILWAUKEE, WIS.



A preference for good Advertising Art and Engraving is justified from the standpoint of sound business economy as well as from a love of good craftsmanship

PREMIER ENGRAVING CO.
DESIGNERS
ILLUSTRATORS
PHOTO
ENGRAVERS
814 WINNEBAGO ST
MILWAUKEE

School Board Journal

DIRECTORY OF EQUIPMENT AND SUPPLIES

The names given below are those of the leading and most reliable Manufacturers, Publishers and Dealers in the United States. None other can receive a place in this Directory. Everything required in or about a schoolhouse may be secured promptly and at the lowest market price by ordering from these Firms.

ACOUSTICS
Celotex Company, The

ADJUSTABLE WINDOW SHADES
Athey Company, The
Draper Shade Co., L. O.
Shade Service Bureau, The

AIR CONDITIONING
American Blower Company
Buckeye Blower Company
Nelson Corporation, The Herman

AIR WASHERS
American Blower Company
Sturtevant Company, B. F.

ALUMINUM WARE
Cleveland Range Company, The

ARCHITECTS
(See Schoolhouse Architects' Directory)

ASH HOISTS
Gillis & Geoghegan

AUDITORIUM SEATING
American Seating Company
Arlington Seating Company
Brunswick Seating Works
Heywood-Wakefield Co.
Kundtz Company, The Theodor
Mahoney Chair Company
National School Equipment Co.
Peabody Seating Co.
Rowles Co., E. W. A.
Standard Mfg. Company
Steel Furniture Company

AUTOMATIC TELEPHONE SYSTEMS
North Electric Mfg. Company, The

BASEMENT WINDOWS—STEEL
Detroit Steel Products Company
Truscon Steel Company

BLACKBOARD CLEANER
Huntington Laboratories, Inc., The
Midland Chemical Laboratories
Oakite Products, Inc.
Palmer Products, Inc.

BLACKBOARDS—MANUFACTURED
Beckley-Cardy Company
N. Y. Silicate Book Slate Co.
Rowles Co., E. W. A.
Standard Blackboard Company
Weber Costello Company

BLACKBOARD—SLATE
Natural Slate Blackboard Co.
Pennsylvania Structural Slate Co.
Rowles Co., E. W. A.

BLEACHERS
Circle A Products Corp.
Wayne Iron Works
Williams Iron Works

BLEACHER SEATS
Minter Homes Corporation

BOILERS
Heggie Simplex Boiler Company
Kewanee Boiler Company
Pacific Steel Boiler Corp. of Illinois
Titusville Iron Works Co.

BOILER COMPOUND
Huntington Laboratories, Inc., The
Midland Chemical Laboratories
Palmer Products, Inc.

BOOK CASES
Peterson & Company, Leonard
Remington-Rand Business Service, Inc.

BOOK COVERS
Holden Patent Book Cover Co.
Iroquois Publishing Company
Walraven Book Cover Co., A. T.

BOOKKEEPING MACHINES
Remington-Rand Business Service, Inc.

BOOK PUBLISHERS
American Book Company
Beckley-Cardy Company
Bruce Publishing Co.
Encyclopaedia Britannica, Inc.
Gregg Publishing Company
Houghton, Mifflin Co.
Iroquois Publishing Company
Laidlaw Brothers
Merriam Co., G. & C.
Winston Co., The John C.

BRONZE TABLETS
Russell & Sons Co., Albert

BRONZE TABLETS, SIGNS, LETTERS
Russell & Sons Co., Albert

BRUSHES
Huntington Laboratories, Inc., The
Midland Chemical Laboratories
Milwaukee Dustless Brush Co.
Palmer Products, Inc.

BUILDING MATERIALS
Asbestos Buildings Company
Detroit Steel Products Company
International Casement Co., Inc.
Minter Homes Corporation
North Western Steel Products Company
Structural Slate Company
Truscon Steel Company

BULLETIN BOARDS
Beckley-Cardy Company
N. Y. Silicate Book Slate Co.
Paddock Cork Co.
Rowles Co., E. W. A.
Weber Costello Company

BUSES
Wayne Works, The

CAFETERIA EQUIPMENT
Blickman, Inc., S.
Cleveland Range Company, The
Dougherty & Sons, Inc., W. F.
Pick-Barth Co., Inc., Albert
Sani Products Co., The
Standard Gas Equipment Corp.
Van Range Co., John

CHAIRS
Algoma Wood Products Co.
Beckley-Cardy Company
Brunswick Seating Works
Clarin Manufacturing Co.
Maple City Stamping Company
Peabody Seating Co.
Stakmore Company
Standard School Equipment Co.
Tell City Chair Company
Wark-Beacon Steel Furniture Co.

CHAIRS—FOLDING
Brunswick Seating Works
Mahoney Chair Company
Maple City Stamping Company
Metal Specialty Co.
Peabody Seating Co.
Rowles Co., E. W. A.
Royal Metal Mfg. Co.
Standard Mfg. Company
Vitek Mfg. Co.

CHALKS
American Crayon Company
Binney & Smith Co.

CHARTS
Weber Costello Company

CLASSROOM FILMS
Eastman Teaching Films, Inc.

CLEANING COMPOUNDS
Continental Chemical Corporation
Hillyard Chemical Company
Midland Chemical Laboratories
Oakite Products, Inc.
Palmer Products, Inc.

CLEANING PRODUCTS
Huntington Laboratories, Inc., The
Palmer Products, Inc.

CLOCKS—PROGRAM
Landis Eng. & Mfg. Co.
Standard Electric Time Co.
Time-Systems Company

CLOTH BLACKBOARDS
Beckley-Cardy Company
N. Y. Silicate Book Slate Co.
Weber Costello Company

CORK TILE AND CORK CARPET
Congoleum-Nairn, Inc.

COOKING APPARATUS
Cleveland Range Company, The
Dougherty & Sons, Inc., W. F.

CRAYONS
American Crayon Company
Beckley-Cardy Company
Binney & Smith Co.
Bradley Company, Milton
National Crayon Co.
Rowles Co., E. W. A.
Weber Costello Company

CRAYON COMPASSES
N. Y. Silicate Book Slate Co.
Weber Costello Company

CRAYON TROUGHS
Dudfield Manufacturing Company
Weber Costello Company

CULVERTS
Armco Culvert Mfrs. Association

CURTAIN CARRIERS
Perkins Curtain Carrier Co.

DAMP-PROOFING
Truscon Steel Company
Vortex Mfg. Co.

DEAFENING QUILT
Celotex Company, The

DESKS—OFFICE
Beckley-Cardy Company
Gunn Furniture Co.
Imperial Desk Company
Rowles Co., E. W. A.
Welch Manufacturing Company, W. M.

DIPLOMAS
Beckley-Cardy Company
Welch Mfg. Co., W. M.

DISHWASHERS
Champion Dish Washing Machine Co.
Cleveland Range Company, The

DISHWASHING COMPOUND
Huntington Laboratories, Inc., The
Midland Chemical Laboratories
Oakite Products, Inc.

DISINFECTANTS
Continental Chemical Corporation
Hillyard Chemical Company
Huntington Laboratories, Inc., The
Midland Chemical Laboratories
Palmer Products, Inc.

DOMESTIC SCIENCE EQUIPMENT
Christiansen, C.
Cleveland Range Co.
Dougherty & Sons, Inc., W. F.
Kewaunee Mfg. Co.
Kimball Company, W. W.
Peterson & Co., Leonard
Pick-Barth Co., Inc., Albert
Sheldon & Co., E. H.
Standard Gas Equipment Corp.
Van Range Co., John
Welch Manufacturing Company, W. M.

DOORS
Irving Hamlin
Richards-Wilcox Mfg. Co.
Roddis Lumber & Veneer Co.

DOORS, STEEL-FIREPROOF
Detroit Steel Products Company

DRAINS
Armco Culvert Mfrs. Association

DRAFTING DEPT. FURNITURE
Bradley Company, Milton
Christiansen, C.
Kewaunee Mfg. Company
Rowles Co., E. W. A.
Sheldon & Co., E. H.
Vitek Manufacturing Co., Inc.

DRINKING FOUNTAINS
Century Brass Works, Inc.
Clow & Sons, James B.
Murdock Mfg. & Supply Co.
Nelson Mfg. Company, N. O.
Rundle-Spence Mfg. Company
Taylor Company, Halsey W.

DUPLICATING MACHINES
Ditto, Incorporated

ELECTRICAL EQUIPMENT
Adam Electric Company, Frank
Cleveland Range Company, The

ERASERS
Beckley-Cardy Company
Palmer Products, Inc.
Rowles Co., E. W. A.
Weber Costello Co.

ERASER CLEANERS
Palmer Products, Inc.
Weber Costello Company

FENCES
Anchor Post Fence Company
Cyclone Fence Co.
Page Fence Association
Stewart Iron Works Co., The
Wayne Iron Works

FILING CABINETS
Yawman & Erbe Mfg. Company

FILING SYSTEMS
Remington-Rand Business Service, Inc.

FIRE ALARM SYSTEMS
Standard Electric Time Company

FIRE ESCAPES
Potter Manufacturing Corp.
Standard Conveyor Company

FIRE EXIT LATCHES
Potter Manufacturing Corp.
Steffens-Amberg Company
Vonnegut Hardware Co.

FIREPROOF DOORS
Detroit Steel Products Co.
Dahlstrom Metallic Door Co.
Truscon Steel Company

FIREPROOFING MATERIALS
Asbestos Buildings Company

FLAGS
Annin & Co.

FLAG POLES
Biefeld & Company, Otto
Nelson Mfg. Co., N. O.
Rowles Co., E. W. A.

FLOOR COVERING
Congoleum-Nairn, Inc.
Duraflex Co., The
Heywood-Wakefield Co.
Rubberstone Corporation

FLOOR FINISH
Continental Chemical Corporation
Huntington Laboratories, Inc., The
Midland Chemical Laboratories
Palmer Products, Inc.

FLOORING
Carter Bloxonend Flooring Co.
Congoleum-Nairn, Inc.
Duraflex Co., The
Maple Flooring Mfrs. Association
Rubberstone Corporation
Truscon Steel Company
United States Quarry Tile Co.

FLOORING—COMPOSITION
Congoleum-Nairn, Inc.
Duraflex Co., The
Rubberstone Corporation

FLOOR TILES
Congoleum-Nairn, Inc.
Norton Company
Rubberstone Corporation

FLOORS, STEEL FIREPROOF
Truscon Steel Company

FLOOR TREATMENTS
Continental Chemical Corporation
Huntington Laboratories, Inc., The
Midland Chemical Laboratories
Palmer Products, Inc.

FLOOR TREATING COMPOUNDS
Continental Chemical Corporation

FLUSH VALVES
Bowlus Mfg. Company, The
Clow & Sons, James B.

FOLDING CHAIRS
Brunswick Seating Works
Clarin Mfg. Company
Mahoney Chair Company
Maple City Stamping Company
Metal Specialty Co.
Peabody Seating Co.
Royal Metal Mfg. Co.
Stakmore Company
Standard Mfg. Company
Vitek Manufacturing Co.

FOLDING PARTITIONS
Hamlin, Irving
Richards-Wilcox Mfg. Co.
Horn Folding Partition Co., Paul
Wilson Corp., Jas. G.

FURNITURE
Algoma Wood Products Co.
American Seating Co.
Arlington Seating Company
Beckley-Cardy Company
Brunswick Seating Works, Inc.
Cleveland Range Company, The
Columbia School Supply Company
Gunn Furniture Company
Heywood-Wakefield Co.
Imperial Desk Company
Kewaunee Mfg. Company
Kimball Company, W. W.
Kundtz Company, The Theo.
Maple City Stamping Company
National School Equipment Co.
Peabody Seating Co.
Remington-Rand Business Service, Inc.
Rowles Co., E. W. A.
Royal Metal Mfg. Co.
Stakmore Company
Standard School Equipment Co.
Steel Furniture Company
Tell City Chair Company
Wark-Beacon Steel Furniture Co.
Welch Manufacturing Company, W. M.
Yawman & Erbe Mfg. Company

FURNITURE BRACES
Wittliff Furniture Brace Co.

GAS—NATURAL
Skelly Oil Company

GAS MACHINES
Matthews Gas Machine Co.

GLASS
Libbey-Owens Glass Co.
Manufacturers Glass Company

GLOBES
Beckley-Cardy Company
Rand, McNally & Company
Weber Costello Company

GRAND STANDS
Pittsburgh-Des Moines Steel Co.
Wayne Iron Works

GYMNASIUMS
Minter Homes Corporation

GYMNASIUM APPARATUS
Chicago Gymnasium Equipment Co.
Medart Mfg. Co., Fred
Narragansett Machine Company

GYMNASIUM FLOORING
Carter Bloxonend Flooring Co.

HAIR DRIER
Chicago Hardware Foundry Co.
(Sani-Dri Division)

HEATING SYSTEMS
American Blower Company
Buckeye Blower Co.
Clow & Sons, Jas. B. ("Gasteam"
Crane Company
Dunham Company, C. A.
Heggie Simplex Boiler Company
Nelson Corp., The Herman
Pacific Steel Boiler Corp. of Illinois
Peerless Unit Ventilation Co., Inc.
B. F. Sturtevant Co.

HYDRANTS
Murdock Mfg. & Supply Co.

INKS
American Crayon Company
Sanford Mfg. Co.

INKWELLS
Sengbusch Self-Closing Inkstand Co.
Squires Inkwell Company
Tannewitz Works, The
U. S. Inkwell Company

JANITORS' SUPPLIES
Continental Chemical Corporation
Dougherty & Sons, Inc., W. F.
Huntington Laboratories, Inc., The
Midland Chemical Laboratories
Milwaukee Dustless Brush Co.
Oakite Products, Inc.
Palmer Products, Inc.
Pick-Barth Co., Inc., Albert

LABORATORY EQUIPMENT
Knott Apparatus Co., L. E.
Leitz, Inc., E.
Standard Electric Time Company
Welch Manufacturing Company, W. M.

LABORATORY FURNITURE
Alberene Stone Company
Columbia School Supply Company
Kewaunee Mfg. Company
Kimball Company, W. W.
Peterson & Co., Leonard
Sheldon & Company, E. H.
Welch Manufacturing Company, W. M.

LADDERS
Dayton Safety Ladder Co., The

LAWN MOWERS
Coldwell Lawn Mower Company

LAUNDRY MACHINERY
Troy Laundry Machinery Co.

LIBRARY FURNITURE
Gaylord Brothers
Kimball Company, W. W.
Peterson & Company, Leonard
Remington-Rand Business Service, Inc.
Welch Manufacturing Company, W. M.
Yawman & Erbe Mfg. Company

LIBRARY SUPPLIES
GaylordBrothers

LIGHTING FIXTURES
Belson Mfg. Company
Duplex-A-Lite Division of
The Miller Co.
Gleason Tiebout Glass Co.
Graybar Electric Co., Inc.
Holophane Company, Inc.

LINOLEUMS
Congoleum-Nairn, Inc.

LIQUID FLOOR HARDENER
Sonneborn Sons, L.

LIQUID SOAPS
Continental Chemical Corporation
Huntington Laboratories, Inc.
Midland Chemical Laboratories
Palmer Products, Inc.

LOCKERS
All-Steel-Equip Company
Berger Manufacturing Company
Durablit Steel Locker Co.
Lyon Metal Products, Inc.
Medart Mfg. Co., Fred
Narragansett Machine Company
North Western Steel Products Co.
Wilson Corp., Jas. G.

LOCKS—KEYLESS
Dudley Lock Corporation, The
Miller Keyless Lock Co., J. B.

LUMBER
Roddis Lumber & Veneer Company

MAPS
Beckley-Cardy Company
Rand, McNally & Company
Weber Costello Company

MEMORIAL TABLETS
Forman Company, The
Russell & Sons Co., Albert

METAL BLACKBOARD TRIM
Dudfield Manufacturing Company
Truscon Steel Company

METAL LATH
Berger Manufacturing Company
North Western Steel Products Company
Truscon Steel Company

MICROSCOPES
Bausch & Lomb Optical Co.
Leitz, Inc., E.
Spencer Lens Company

MODELING CLAY
American Crayon Company
Bradley Company, Milton

MOTION PICTURE MACHINES
Eastman Teaching Films, Inc.
Q R S-DeVry Corporation

PAINTS
American Crayon Company
U. S. Gutta Percha Paint Co.
Vortex Mfg. Co.

PAINT—TECHNICAL
Truscon Steel Company

PAINT SPRAYING EQUIPMENT
DeVilbiss Mfg. Co., The
Vortex Mfg. Co.

PANIC EXIT DEVICES
Potter Manufacturing Corp.
Steffens-Amberg Company
Vonegut Hardware Company

(Continued on Page 168)

Introducing an original device for mixing colors

Junior Color Tablet

By H. Francis James

Director, Art Department
University of Colorado

In this interesting text for the fifth and sixth grades, a system has been cleverly worked out, which shows what actually takes place when colors are mixed. The colors are blended right before the pupils' eyes; they have a most convincing demonstration of what really occurs, and they themselves control it in every detail. The Tablet is composed of twenty-four plates, including exercises and experiments instructing children in hue, chroma, intensity, values, color harmonies, etc. **Price, 35 cents.**

Teachers and pupils alike will be fascinated by the color-mixing plan explained in the Tablet. Send for a copy on approval!

A complete course in representation

Elementary Free-Hand Drawing

By W. Earl Brownjohn

Consists of 20 plates of drawings, including 70 objects to be drawn, and covers the entire field of outline drawing from still life. Emphasizes correct perspective in representing concrete objects and the elements of pictorial composition. Every precaution has been taken to present the fundamentals with such simplicity and thoroughness that they will be understood by the average pupil. *Price, 68 cents.*

Supplementary readers for the primary grades that set a new standard of excellence

Pinkey Dew

By Rowena Califf

Twelve original stories for the primary grades illustrated in color. Each story is woven about some everyday experience with which children are familiar. Includes stories about horses, bears, and squirrels, which the youngsters will love to hear again and again. While the stories are primarily intended to interest and entertain children, they also instill in their minds something that tends towards character building. *Price, 80 cents.*

The Curious Car

By Lillian K. Craig

A storybook for children that centers about an automobile and all the queer things that happened to it and to the children who rode in it. It was an extremely unusual car and it could do all sorts of unusual things. Today, with an automobile in almost every family, children will be delighted with a story centering about a certain car and the exciting adventures in connection with it. Price to be announced.

Folk Tales Retold

By Margaret Arnold and Frances M. Beem

More stories for the primary grades! Stories about the five pennies, and the five little red caps, and the five Chinese dishes, and about the little snowgirl, and one story about how the rabbit happened to lay colored eggs on Easter. Beautifully illustrated in color. *Price, 72 cents.*

Copies of these splendid books can be had on ten days' approval. Write Dept. A.S.B.J.11.

The Bruce Publishing Company

New York, N. Y.
342 Madison Ave.

354-364 Milwaukee St., Milwaukee, Wis.

Chicago, Ill.
66 E. South Water St.

School Board Journal

DIRECTORY OF EQUIPMENT AND SUPPLIES

The names given below are those of the leading and most reliable Manufacturers, Publishers and Dealers in the United States. None other can receive a place in this Directory. Everything required in or about a schoolhouse may be secured promptly and at the lowest market price by ordering from these Firms.

(Continued from Page 166)

PAPER
American Crayon Company
Beckley-Cardy Company

PASTE
American Crayon Company
Bradley Company, Milton
Stafford Mfg. Co.

PENCILS
American Crayon Company

PENCIL SHARPENERS
Automatic Pencil Sharpener Co.

PERFORATED PIPE
Armco Culvert Mfrs. Association

PIANOS
Kimball Company, W. W.

PLAYGROUND APPARATUS
Chicago Gymnasium Equipment Co.
Everwear Mfg. Company, The
Hill-Standard Company
Medart Mfg. Co., Fred
Mitchell Manufacturing Co.
Narragansett Machine Company
Potter Manufacturing Corp.

PLAYGROUND ENCLOSURES
Anchor Post Fence Company
Cyclone Fence Co.

PLUMBING FIXTURES
Bowlus Mfg. Company, The
Century Brass Works, Inc.
Clow & Sons, James B.
Copper & Brass Research Association
Crane Company
Hoffmann & Billings Mfg. Co.
Nelson Mfg. Company, N. O.
Rundle-Spence Mfg. Company
Vogel Company, Joseph A.

POINTERS
N. Y. Silicate Book Slate Co.
Weber Costello Company

PORTABLE BLEACHERS
Circle A Products Corp.
Detroit Atlas Portable Bleacher Co.
Minter Homes Corporation
Wayne Iron Works

PORTABLE SANDING MACHINES
Clarke Sanding Machine Company

PORTABLE SCHOOLHOUSES
American Portable House Co.
Asbestos Buildings Co.
Circle A Products Corporation
Harris Brothers Company
Minter Homes Corporation

PROJECTION LANTERNS
Spencer Lens Co.
Trans-Lux Daylight Picture Screen Corp.

PROJECTION MACHINES
Eastman Teaching Films, Inc.
Bell & Howell Company

PROJECTORS
Bausch & Lomb Optical Co.
Holmes Projector Company

PUBLIC ADDRESS SYSTEMS
Graybar Electric Co., Inc.
Western Electric Co.

PUMPS—Vacuum, Condensation, Centrifugal, Sump
Nash Engineering Co.

RADIOS
Atwater Kent Mfg. Company
Grigsby-Grunow Co.
Radio-Victor Corporation of America

RANGES
Cleveland Range Company, The

REINFORCED STEEL
Berger Manufacturing Company
Truscon Steel Company

RECORD SYSTEMS
Remington-Rand Business Service, Inc.

REPRODUCTION SYSTEMS
Western Electric Co.

ROLLING PARTITIONS
Wilson Corp., Jas. G.

RULERS
Seneca Falls Rule & Block Co.

SANDERS
Clarke Sanding Machine Company

SAFETY STAIR TREADS
American Abrasive Metals Co.
Safety Stair Tread Co., The

SASH OPERATING DEVICES, STEEL
Detroit Steel Products Company
Truscon Steel Company

SASH, VENTILATING
Detroit Steel Products Company

SCIENTIFIC APPARATUS
Rowles Co., E. W. A.
Standard Electric Time Company
Welch Mfg. Co., W. M.

SCREENS—PICTURE
Eastman Teaching Films, Inc.
Trans-Lux Daylight Picture Screen Corp.

SCRUBBING EQUIPMENT
Finnell System, Inc.

SEWAGE EJECTORS
Nash Engineering Co.

SEWING MACHINES
Singer Sewing Machine Co.
White Sewing Machine Co.

SHOWERS
Clow & Sons, James B.
Hoffmann & Billings Mfg. Co.

SLATED CLOTH
Beckley-Cardy Company
N. Y. Silicate Book Slate Co.
Weber Costello Company

SOAP DISPENSING EQUIPMENT
Palmer Products, Inc.

SPRAY PAINTING EQUIPMENT
DeVilbiss Mfg. Co., The
Vortex Mfg. Co.

STAFF LINERS
Weber Costello Company

STAGE CURTAINS, EQUIPMENT AND SCENERY
Acme Scenic Studios
Beck & Sons Co., The Wm.
Belson Mfg. Co.
Chicago Studios, Inc.
Novelty Scenic Studios
Tiffin Scenic Studios
Twin City Scenic Company
Universal Scenic Studios, Inc.
Weiss & Sons, I.

STAGE EQUIPMENT AND CURTAINS
Perkins Curtain Carrier Co.
Standard Decorating Co.

STAIR TREADS
Alberene Stone Company
American Abrasive Metals Co.
Mills Company, The
Norton Company
Safety Stair Tread Co., The
Sanymetal Products Company

STEEL JOISTS
Truscon Steel Company

STEEL STORAGE CABINETS
Durabilt Steel Locker Co.
Medart Mfg. Co., Fred
North Western Steel Products Co.

STEEL WINDOWS
Detroit Steel Products Company
North Western Steel Products Company
Truscon Steel Company

STOOLS—STEEL ADJUSTABLE
Vitek Mfg. Co.

TABLES
Gunn Furniture Company
Kimball Company, W. W.
Mutschler Bros. Company
Remington-Rand Business Service, Inc.
Welch Manufacturing Company, W. M.

TABLETS—BRONZE
Russell & Sons Co., Albert

TALKING MACHINES
Radio-Victor Corporation

TEACHER AGENCIES
Natl. Association of Teacher Agencies
Teacher Agencies Directory

TELEPHONE SYSTEMS
Graybar Electric Co., Inc.
North Electric Mfg. Company, The
Standard Electric Time Company

TEMPERATURE REGULATION
Johnson Service Company

TOILET PAPER AND FIXTURES
A. P. W. Paper Company
Palmer Products, Inc.

TOWELS
A. P. W. Paper Company
Bay West Paper Company
Brown Company
Palmer Products, Inc.

TOILET PARTITIONS
Clow & Sons, James B.
Mills Company, The
Sanymetal Products Company
Structural Slate Company
Weis Mfg. Co., Henry

TYPEWRITERS
Remington-Rand Business Service, Inc.
Smith & Corona Typewriters Inc., L C
Underwood Typewriter Company

VACUUM CLEANING SYSTEMS
Spencer Turbine Company, The
Sturtevant Co., B. F.

VACUUM PUMPS
Dunham Company, C. A.
Nash Engineering Company

VALVES—FITTINGS
Bowlus Manufacturing Co., The e
Clow & Sons, James B.
Crane Company

VENTILATING SYSTEMS
Buckeye Blower Company
Nelson Corp., The Herman
Peerless Unit Vent. Co., Inc.
Sturtevant Company, B. F.

VENTILATORS
Sturtevant Co., B. F.

VOCATIONAL EQUIPMENT
Christiansen, C.
Columbia School Supply Co.
Kimball Company, W. W.
Richards-Wilcox Mfg. Co.
Sheldon & Company, E. H.
Wallace & Co., J. D.
Welch Manufacturing Company, W. M.

WARDROBES
Evans, W. L.
K-M Supply Company
Progressive School Equipment Mfg. Co., The
Wilson Corp., Jas. G.

WASTE PAPER BASKETS
National Vulcanized Fibre Co.
North Western Steel Products Company

WASTE RECEPTACLES
Solar-Sturges Mfg. Co.

WATER CLOSETS
Bowlus Manufacturing Co., The

WATER COLORS
American Crayon Company
Bradley Company, Milton

WATER PURIFIERS
Clow & Sons, Jas. B. (R. U. V.)
Wallace & Tiernan, Inc.

WATERPROOFING
Truscon Steel Company

WAX CRAYONS
Bradley Company, Milton

WEATHERSTRIPS
Athey Company, The

WINDOWS—ADJUSTABLE
Austral Window Company
Detroit Steel Products Company
International Casement Co.
North Western Steel Products Co.
Truscon Steel Company
Universal Window Company
Williams Pivot Sash Company

WINDOW FIXTURES
Austral Window Company
Columbia Mills, Inc.
Peerless Unit Ventilation Co., Inc.
Williams Pivot Sash Company

WINDOW GUARDS
American Fence Construction Co.
Badger Wire & Iron Works
North Western Steel Products Company
Stewart Iron Works Co., The

WINDOWS—REVERSIBLE
Austral Window Company
Detroit Steel Products Company
Williams Pivot Sash Company

WINDOW SHADE CLOTH
Columbia Mills, Inc.
Du Pont de Nemours & Co., E. I.
Hartshorn Company, Stewart
Steele Mfg. Co., Oliver C.

WINDOW SHADE ROLLERS
Columbia Mills, Inc.
Hartshorn Company, Stewart
Steele Mfg. Co., Oliver C.

WINDOW SHADES
Athey Company, The
Beckley-Cardy Company
Columbia Mills, Inc.
Draper Shade Co., Luther O.
Du Pont de Nemours & Co., E. I.
Hartshorn Company, Stewart
Shade Service Bureau
Steele Mfg. Co., Oliver C.

WINDOWS—STEEL
Detroit Steel Products Company
Truscon Steel Company

WIRE GUARDS
Badger Wire & Iron Works
Cyclone Fence Co.
Stewart Iron Works Co., The

WOODWORKING MACHINERY
Wallace & Co., J. D.

ADVERTISERS' REFERENCE INDEX

Acme Scenic Studios.....164
Adam Electric Company, Frank.....154
A. P. W. Paper Company.....3rd Cover
Alberene Stone Company.....109
American Book Company.....150
American Crayon Company.....104
American Portable House Co.....143
Anchor Post Fence Company.....100
Arlington Seating Company..... 22
Armco Culvert Mfrs. Association....145
Asbestos Buildings Co.....158
Athey Company 68
Austral Window Company....4th Cover
Automatic Pencil Sharpener Co.....165

Badger Wire & Iron Works.....163
Bausch & Lomb Optical Co.....156
Bay West Paper Co.....132
Beck & Sons Co., The Wm.....162
Beckley-Cardy Company 28
Bell & Howell Company..... 99
Belson Manufacturing Co.....157
Berger Mfg. Company.....117
Biefeld & Company, Otto.....162
Binney & Smith Company.....104
Bradley Company, Milton.....151
Brown Company, The.....169
Bruce Publishing Company...162 & 167
Brunswick Seating Works, Inc..... 24
Buckeye Blower Co.....139

Cannon Printing Company.....165
Carter Bloxonend Flooring Co..... 9
Celotex Company, The..... 81
Century Brass Works, Inc.....136
Champion Dish Washing Mach. Co..131
Chicago Gymnasium Equip. Co.....144
Chicago Hardware Foundry Co.....123
Chicago Studios, Inc.....157
Christiansen, C. 159
Circle A Products Corp....70, 88 & 100
Clarin Manufacturing Co..... 29
Classified Wants 164
Cleveland Range Company, The.....130
Clow & Sons, James B.....121
Coldwell Lawn Mower Company..... 10
Columbia Mills, Inc..... 67
Columbia School Supply Co..... 21
Congoleum-Nairn, Inc. 69
Continental Chemical Corp..... 91
Copper & Brass Research Ass'n.... 72
Crane Co. 125
Cyclone Fence Company..... 77

Dahlstrom Metallic Door Co..... 65
Dayton Safety Ladder Co..... 86
Detroit Steel Products Co..... 66
DeVilbiss Company, The.....161
Ditto, Incorporated 105
Dougherty & Sons, Inc., W. F.....146
Draper Shade Co., Luther O.....138
Dudfield Manufacturing Co.....127
Dudley Lock Corporation, The.....111
Dunham Company, C. A.....133
Du Pont de Nemours & Co., E. I. .....126 & 155
Durabilt Steel Locker Co.....115
Duraflex Company, The..... 85

Eastman Teaching Films, Inc.....103
Encyclopaedia Britannica, Inc..... 11
Evans, W. L.....140

Finnell System, Inc.....133

Gaylord Brothers 152
Gillis & Geoghegan, The.....145
Ginn & Company.....149

Hamlin, Irving 140
Harris Brothers Co.....119
Hartshorn Company, Stewart..... 74
Heggie Simplex Boiler Co..... 7
Heywood-Wakefield Co. 97
Hill-Standard Co. 101
Hillyard Chemical Company.....114
Hoffmann & Billings Mfg. Co.....136
Holden Patent Book Cover Co..... 93
Holmes Projector Company.....156
Holophane Company, Inc..... 75
Horn Folding Partition Co., Paul..142
Houghton, Mifflin Company.....150
Huntington Laboratories, Inc., The.159

Imperial Desk Company..... 14
Iroquois Publishing Co.....152

Johnson Service Company..... 4

Kewanee Boiler Corp..... 3
Kewaunee Mfg. Company.....108
Kimball Company, W. W.....110
K-M Supply Company.....90 & 96
Knott Apparatus Co., L. E.....108
Kundtz Co., The Theodor..... 19

Leitz, Inc., E.....157
Lyon Metal Products, Inc.....113

Mahoney Chair Company, The..... 24
Maple City Stamping Company..... 20
Maple Flooring Mfrs. Association... 79
Matthews Gas Machine Co.....158
Medart Mfg. Company, Fred.....116
Metal Specialty Co..... 26
Midland Chemical Laboratories, Inc. 2
Miller Keyless Lock Co., The J. B..160
Mills Company, The.....172
Milwaukee Dustless Brush Co.....163
Minter Homes Corporation.....163
Mitchell Mfg. Company.....118
Murdock Mfg. & Supply Co., The..158
Mutschler Bros. Company..... 26

Narragansett Machine Co.....146
Nash Engineering Co... 30
National Assn. of Teachers Agencies..162
National Crayon Company..... 28
National School Equipment Co..... 25
National Vulcanized Fibre Co.....161
Natural Slate Blackboard Co..... 1
Nelson Corp., The Herman.....Insert
Nelson Mfg. Co., N. O.....122
Newman Manufacturing Co., The...163
N. Y. Silicate Book Slate Co.....160
North Electric Mfg. Company, The..147
North Western Steel Products Co..138
Norton Company 78
Novelty Scenic Studios.....155

Oakite Products, Inc.....134

Pacific Steel Boiler Corp. of Illinois 5
Paddock Cork Company.....161
Palmer Products, Inc.....161
Peabody Seating Co., Inc..... 20
Peerless Unit Ventilation Co.....135
Perkins Curtain Carrier Company...160
Peterson & Co., Leonard..... 98
Pick-Barth Co., Inc., Albert.....128
Pittsburgh-Des Moines Steel Co.... 76
Potter Manufacturing Corp.....144
Premier Engraving Co.....165
Professional School Service Directory.160

Q-R-S DeVry Corporation.....153

Radio-Victor Corp. of America.....153
Remington-Rand Business Serv., Inc.171
Richards-Wilcox Mfg. Co..... 92
Roddis Lumber & Veneer Co..... 71
Rowles Co., E. W. A..... 14
Royal Metal Mfg. Company..... 27
Rubberstone Corporation 13
Rundle-Spence Mfg. Co..... 10
Russell & Sons Co., Albert.....160

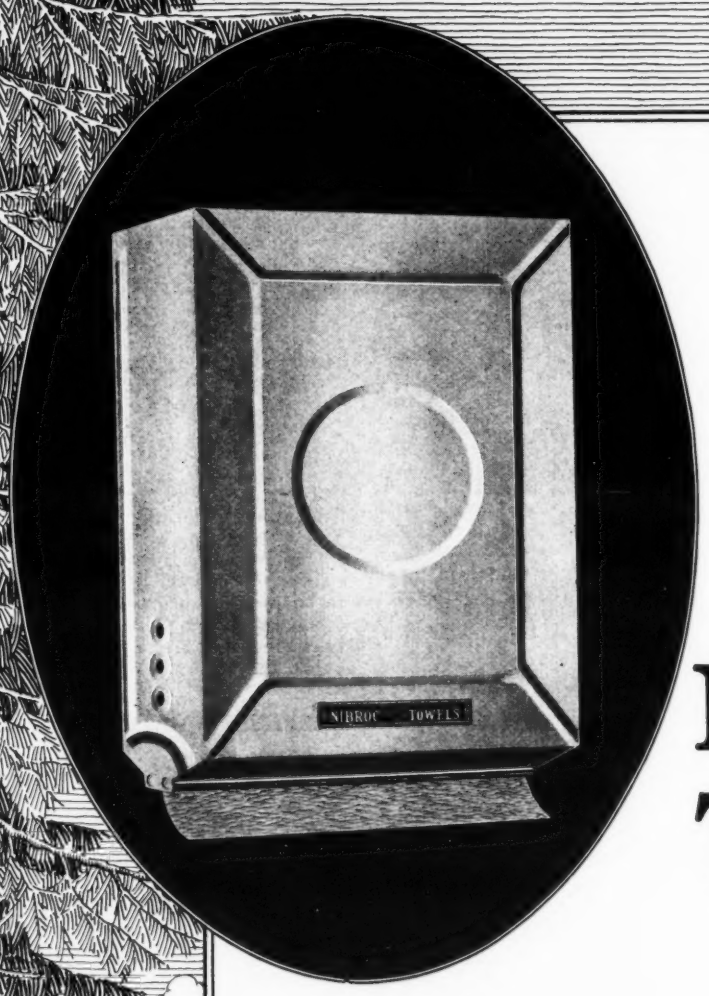
Safety Stair Tread Co., The..... 84
Sanford Manufacturing Company.... 29
Sanymetal Products Company.....132
School Architects Directory.....16 & 17
Sengbusch Self-Closing Inkstand Co. 24
Sheldon & Company, E. H.....102
Singer Sewing Machine Co..... 15
Solar-Sturges Mfg. Co.....112
Sonnenborn Sons, L..... 12
Spencer Lens Company.....155
Spencer Turbine Company..... 8
Squires Inkwell Company.....159
Standard Blackboard Co.....160
Standard Conveyor Company.....164
Standard Decorating Co., The.....158
Standard Electric Time Co., The... 32
Standard Gas Equipment Corp.....129
Standard Manufacturing Co., The.. 22
Standard School Equipment Co..... 26
Steele Mfg. Co., Oliver C.....159
Steel Furniture Co..... 23
Steffens-Amberg Company 12
Stewart Iron Works Co., The.....118
Sturtevant Company, B. F.....137

Tannewitz Works, The.....158
Taylor Company, Halsey W.....124
Teachers Agencies 164
Tiffin Scenic Studios.....160
Titusville Iron Works Co., The.....141
Trans-Lux Daylight Picture Screen Corp. 157
Troy Laundry Machinery Co., Inc..130
Truscon Steel Company.....147
Twin City Scenic Co.....154

Underwood Typewriter Co.....107
U. S. Gutta Percha Paint Co.....126
U. S. Inkwell Company..... 28
United States Quarry Tile Co..... 82
Universal Scenic Studio, Inc.....165

Van Range Company, John.....128
Vitek Manufacturing Co., Inc.....158
Vogel Company, Joseph A....2nd Cover
Vonnegut Hardware Co..... 6
Vortex Mfg. Co..... 87

Wallace & Tiernan, Inc..... 73
Walraven Book Cover Co., A. T...106
Wayne Iron Works.....118
Wayne Works, The.....143
Weis Mfg. Company, Henry.....142
Weiss & Sons, I.....162
Western Electric Company..... 95
White Sewing Machine Co..... 18
Williams Iron Works..... 83
Williams Pivot Sash Co., The..... 80
Wilson Corp., Jas. G..... 89

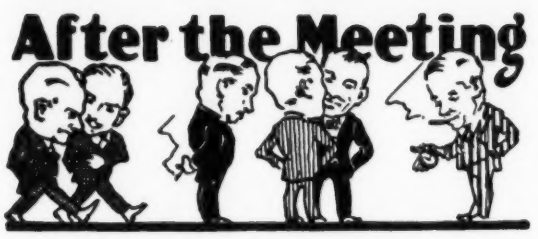


Guardians
of health
Exponents
of economy

NIBROC TOWELS

THE very finest and most economical paper towels you can obtain—they exceed all expectations! Their outstanding emollient and antiseptic qualities, together with their great strength and absorption will convince you. ¶ NIBROCS are made only from long, pure spruce fibres, in *brilliant white* and *golden brown.* One *single* NIBROC will thoroughly dry the wettest hands without falling to pieces. ¶ In school washrooms, NIBROCS are a necessary factor in maintaining wholesome conditions. They encourage children to wash their hands more often and eliminate the spreading of infectious diseases found on common cloth or roller towels. ¶ NIBROCS are lintless, and are served clean and fresh, individually from dust-proof, key-locked, enameled cabinets, which are loaned without charge. Write for generous supply of NIBROCS today.

BROWN Company
FOUNDED 1852
Portland, Maine



THE REPORT CARD

"I see you got 73 in history," remarked the golfer-parent absently. "What's par on that course?"

WHAM!

Anxious Mother—And is my little darling really trying?

Weary Teacher—Very.

FATAL

"How did Miss Hoskins come to lose her job in the Chicago schools?"

"It seems that she told her pupils they ought to have more respect for the King's English."

HER FATHER'S DAUGHTER

The daughter of a certain strict-principled old school teacher had attended a dance the previous night, much against her father's wishes. When she appeared for breakfast the next morning, he greeted her with the words: "Good morning, daughter of Satan."

To which the maiden respectfully replied: "Good morning, father."

Then They Laughed Again

"Are you laughing at me?" demanded the irate professor of his class.

"No," came the answer in chorus.

"Well," insisted the professor, "what else is there in the room to laugh at?"—College of the Pacific Weekly.

Sympathetic Control

"Does the coach have the team under control?"

"Does he? Say, every time he gets a headache everyone on the varsity takes an aspirin!"—Pomona Sagehen.

In the Pharmacy School

"I hear Jones fell down on his final examination."

"Yea, he got mixed on the difference between a Dinty Moore and a Denver sandwich."

Wham!

Father (glancing over a report card)—"You got some nice marks last month, son."

Son—"Yes, sir, since you stopped helping me with my home work, I get along fine."

The Early Start

"Well, Mr. O'Rourke," announced the doctor, "it's a ten-pound boy! What are you going to call him?"

"Percival Algernon Reginald O'Rourke," said the proud father. "And I'm going to make a boxer out of him."

"Do you think he'll be as good as you were?"

"Better," was the reply. "Just think of all th' practice he'll git when he goes to school with a name like that."

Mother: "Did the professor say that he could make you into a singer?"

Daughter: "Not exactly. He said that if he could do that he could make a Swiss watch that would yodel."—Punch.

A Misunderstanding

Professor: "How many times have I told you to be to class on time?"

Student: "I don't know. I thought you were keeping score."—Dartmouth Jack o' Lantern.

A Question of Degrees

"So your son got his B.A. and M.A.?"

"Yes, indeed, but his PA still supports him."—Reserve Red Cat.

A Youthful Statistician

Old Lady: "Little boy, I'll give you a penny if you'll go on an errand."

Son of College Professor: "I'm sorry, madam, but do you realize that every hour lost from study costs me fourteen dollars and thirty-seven cents?"—Pennsylvania Punch Bowl.

A Teaser

Tommy was always eager for knowledge, and one day, while walking in the park with his father, they passed a tree, the name of which Tommy desired above all things to know.

"What is that tree?" he asked.

"An elm tree," his father told him.

"Why do they call it an elm?" persisted Tommy.

"Oh, why do they call you 'Tommy'?" asked his father impatiently.

Tommy thought for awhile. Then he said:

"I don't know—why *do* they call me 'Tommy,' father?"

Also a Good Boy

Tommy was always talking about a new friend he had made at school, and what a jolly decent chap he was.

At last his mother began to question him upon the matter. "Who *is* this Bertie Higgs?" she asked. "Is he a good little boy?"

"He honestly is," declared Tommy.

"Does he ever use naughty words?" continued mother.

"No, mother," Tommy assured her with emphasis. "And I am not going to teach him any."

Wise Mother

"I never quite know how much money I ought to send my boys at boarding school."

"Well, I always keep my boy very short of money now. I find he writes home more often, and much more charming letters."—London Opinion.

The Age of Old Gold

The kindergarden teacher thought the children knew how to play Blind Man's Buff. She blindfolded one little girl, and when the child didn't move she asked, "What's the matter, dear, what are you waiting on?"

"A cigarette," was the reply.

"There is no such word as fale," wrote a young fellow on the school blackboard.

"Why don't you correct him?" asked a visitor of the teacher.

"His statement is absolutely correct."—Fortnightly Review.

BUYERS NEWS

NEW SLATE MATERIAL FOR SCHOOLS

The Structural Slate Company of Pen Argyl, Pa., has just issued a new booklet on "Struco Slate and Its Use with Modern Architecture."

The booklet offers the school architect and school-building official material of real help in the planning and erection of school buildings. Struco slate material is used for toilet inclosures, urinals, wainscoting, shower stalls, baseboards, and wall panels, and comes in a variety of colors and finishes which may be adapted to any special room finish.

Struco slate is a new slate material, colored with a finish made of a special nitrocellulose lacquer, which gives a very hard and durable surface. The material was evolved after many years of experimentation and research. As a finish, it will not deteriorate with age and retains it beauty and color indefinitely. Struco slate has been found to be a highly satisfactory substitute for ordinary slate for use in school buildings. It overcomes the disadvantages of ordinary slate in preventing marking and marring of the wall surface, and it produces a clean, bright, and cheerful appearance in any room.

Complete information about Struco slate may be obtained by any architect or school official upon request.

NEW BOOKLET ON LIGHTING

Under the title of "Out of the Darkness," the Gleason-Tiebout Glass Company, of New York City, has issued its new booklet No. 75, describing and illustrating the Celestialite lighting units for school and public buildings. The Celestialite lighting unit minimizes glare, is restful to the eyes, and is a system that most nearly approaches actual daylight.

School officials and architects who are interested in school lighting may obtain a copy of the booklet by writing to the Gleason-Tiebout Glass Company at New York City.

ACOUSTICS AND SEATING

The Department of Research and Engineers of the American Seating Company, Chicago, has recently prepared a brief statement on the important problem of acoustics in school and other auditoriums. The study indicates that several lines of chairs for auditorium seating are now being manufactured by the American Seating Company in which the arrangement of acoustics has been carefully considered and in which a successful effort has been made to reduce defects of reverberations in auditoriums. Architects and school authorities who are engaged in the planning of new buildings and who are endeavoring to overcome defects in existing schools, will find this pamphlet of importance and help.

HARTER COMPANY CHANGES FIRM NAME

The Harter School Supply Company of Cleveland, Ohio, has changed its firm name to The Harter Publishing Company. The Harter School Supply Company has been reincorporated and the capital stock is owned by the Harter Publishing Company.

The change has been made to meet the increasing demands of the school-supply trade. The Harter Supply Company, a subsidiary organization, will act as the sales organization and will devote its efforts to the sales distribution of the products manufactured by the parent corporation, and the merchandising of a complete line of school supplies and equipment.

Mr. Ralph G. Harter continues as president of the firm.

HELPFUL SUGGESTIONS FOR THE HOME-ECONOMICS TEACHER

The Singer Sewing Machine Company, of New York City, has just issued a series of pamphlets on sewing, as well as a helpful manual on machine sewing, for the use of the sewing teacher in home-economics classes.

Each of the pamphlets deals with some particular phase of the sewing problem and each sells at the small price of twenty-five cents. The pamphlet, "How to Make Dresses" describes and illustrates various kinds of dresses which can be made in the school-sewing classes. A second pamphlet, "How to Make Children's Clothes," shows in an interesting way, how appropriate and inexpensive clothes may be made for small children. A third pamphlet, "Short Cuts to Home Sewing," contains suggestions for the care and operation of the sewing machine and the use of the special attachments. A fourth pamphlet, "How to Make Draperies," describes the making of draperies, slip covers, cushions, and other home furnishings. A fifth pamphlet, "A Manual of Sewing Machines," gives instructions for the care and operation of the sewing machine in order to get the best results in sewing.

The manual entitled, "Machine Sewing," is a helpful treatise on the care and use of sewing machines, giving suggestions for the use of the special labor-saving attachments, as well as many practical applications of machine sewing, and the operation of electric machines.

Copies of any of these booklets may be obtained by any school official, or home-economics teacher, upon request.

NEW RICHARDS-WILCOX WARDROBE CATALOG

The Richards-Wilcox Mfg. Company of Aurora, Ill., has issued a sixteen-page booklet, illustrating and describing a most complete and varied line of disappearing-door wardrobes for schools. The wardrobes are made with continuous backboards of either composition or genuine Bangor slate, and are provided with ventilating grilles which keep the clothing dry and carry off all odors. These wardrobes are furnished with, or without, continuous backboards and are made to fit in recesses with plastered backs and ends.

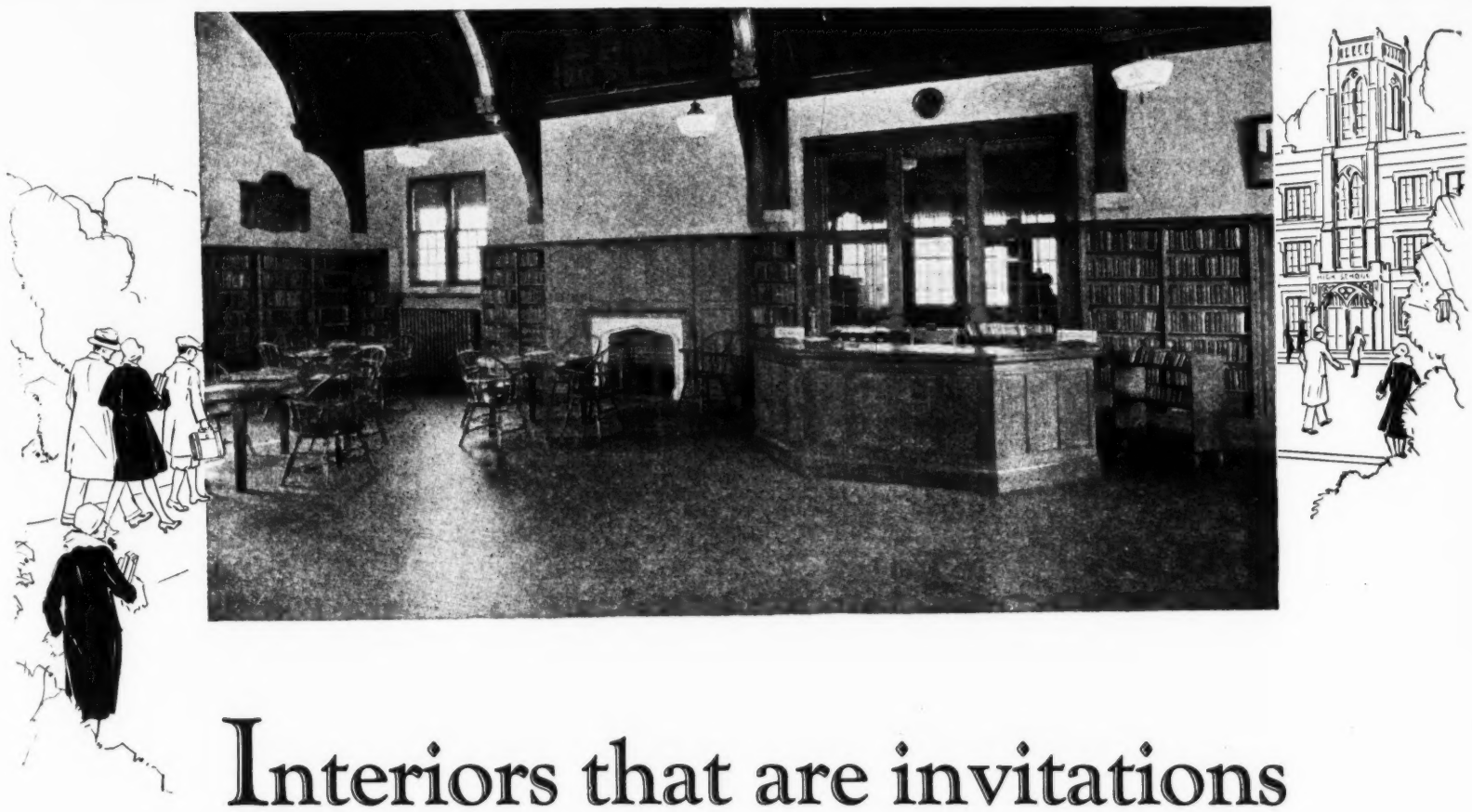
The Richards-Wilcox Company offers to furnish specifications for any type of wardrobe desired and will lay out the entire job to fit any particular need in the schools.

School officials and architects who are interested in the new Richards-Wilcox disappearing-door wardrobe may obtain complete information and prices upon request.

LEITZ OPENS NEW BRANCH OFFICES

E. Leitz, Inc., manufacturers and importers of scientific apparatus and supplies, have announced the opening of two branch offices, one in the east and the other in the middle west.

The eastern office is in Washington, D. C., and is located at 927 Investment Building. The mid-western office is in Chicago, and is located in the Peoples Gas Building at 122 South Michigan Ave.



Interiors that are invitations to read another chapter

The school library must compete with every other school activity for students' time and attention. Making it invitingly attractive has been Library Bureau's assignment for hundreds of schools thru-out the country.

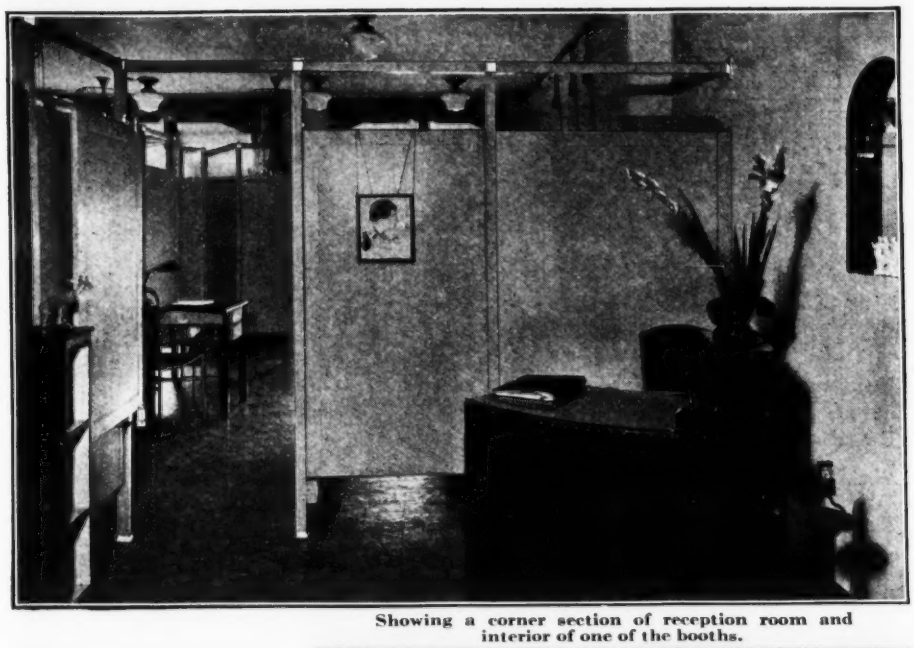
When your new school building is erected, use the Library Bureau man's experienced advice on library furniture and equipment. The basis of suggestions will be a library interior, practical and yet cozy, comfortable and conducive to study . . . an interior that extends an invitation to stay a while longer, to read at least another chapter.

The cost of carrying out these suggestions will be less than you might at first expect. The means of obtaining them is simply to call your local Remington Rand man on the phone. He'll get busy at once . . . and of course with no obligation incurred. Telephone him today.

Library Bureau Division
205 East 42nd St., New York

Remington Rand
BUSINESS SERVICE

This shows how the 2½" stile on the panels and doors of Marblmetal relieves the flat surface and adds immeasurably to its beauty of design.



Showing a corner section of reception room and interior of one of the booths.

Marblmetal Again Steps Forth from the Crowd

Glowing tributes are constantly being paid to the beauty and fine construction of Marblmetal but none is more fitting than its recent selection as the partition par excellence for a Chicago beauty salon. Finished in delicate orchid, Marblmetal adds immeasurably to the atmosphere of this nationally known Mecca for the elite.

Marblmetal is the most outstanding toilet partition since the introduction of metal in this field. It has all the advantages of marble with none of marble's defects. It will not discolor or crack, and being metal will not absorb odors.

Panels and doors are ¾" thick and insulated with a special material. This gives Marblmetal all the solidity of marble. A continuous 2½" stile around the doors and panels relieves any effect of flat surface. Stile is interlocked and reinforced at each corner. Solidly welded across the mitre, ground and filled.

Marblmetal is outstandingly a toilet partition apart from the crowd. If you are interested in Marblmetal, we will gladly send descriptive literature. Or better still, get in touch with our nearest representative and have him show you a sample.

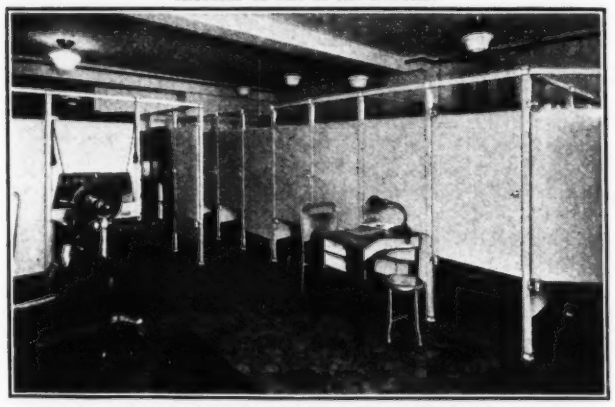
THE MILLS COMPANY

A Mills Metal Partition for Every Purpose

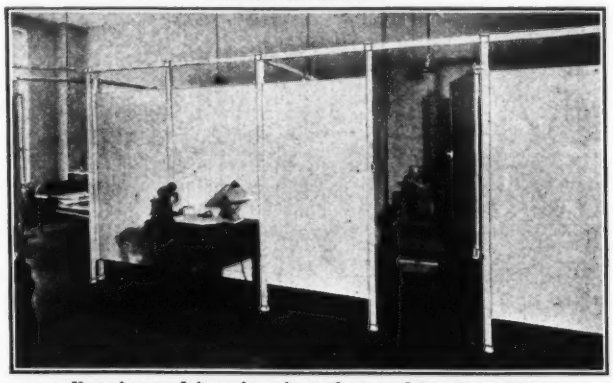
903 WAYSIDE ROAD
CLEVELAND, OHIO

Representatives in All Principal Cities

MARBLMETAL



A study of the harmonious effect afforded by the Marblmetal booths.



Exterior and interior view of row of booths with a glimpse of reception room.

General view of reception room and its beautiful appointments, with Marblmetal booths in background.

Stop washroom waste . . .

ALL over the country today school children are taught not to waste the material they use—pencils, pens, erasers, writing pads

Equip the school lavatories with A. P. W. Fibertex Victor paper towels, and let your teachers show the children how to use them. Teach them to start drying their hands with one corner of the towel, then gradually work diagonally across the sheet using all of the large surface available in the Fibertex Victor. One towel easily dries the hands completely. Not so many used towels in the waste baskets. Lavatories look neater. A. P. W. Fibertex Victor towels are extra-large. Soft. Carefully sterilized. Wonderfully absorbent—with extra long fibres to soak up moisture instantly. Fibertex is economical, too. A real money saver. Because it does a better drying job. And it costs you less to buy. That means money in your pocket. Extra funds for the other items on the budget.

Stop washroom waste with Fibertex. Start your anti-waste campaign today. Just fill out the coupon below and mail for prices.

Fibertex
Victor
TOWELS

A. P. W. PAPER COMPANY
Albany, N. Y. ASBJ-11-29

Please send estimate on number of boxes and price of A. P. W. Fibertex Victor towels required for: .....*School(s) of* .....*students (each)*

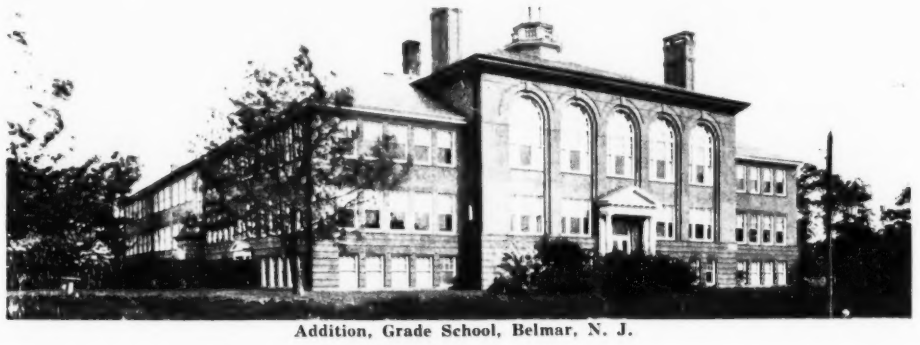
Open .....*weeks* .....*days per week.*

Name .....

Address .....

STANDARD SCHOOL EQUIPMENT

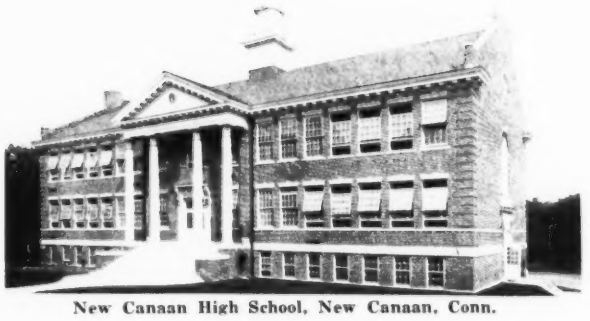
Schools of John Noble Pierson and Son
Equipped With AUSTRAL WINDOWS



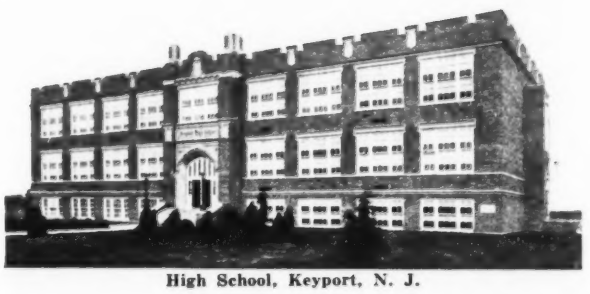
Addition, Grade School, Belmar, N. J.

Addition, High School, North Plainfield, N. J.

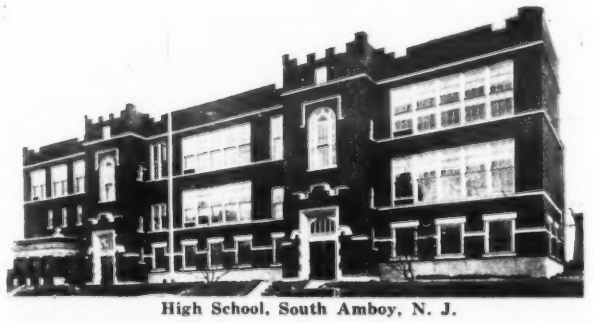
Ventilation Without Draft



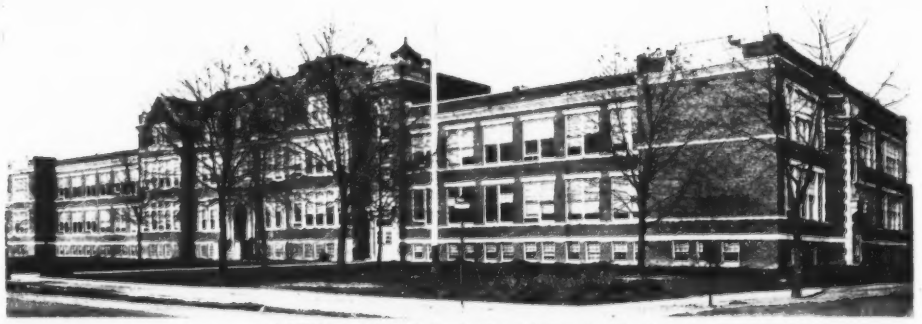
New Canaan High School, New Canaan, Conn.



High School, Keyport, N. J.



High School, South Amboy, N. J.



Addition, High School, Bound Brook, N. J.

School Officials and Architects are particularly impressed with AUSTRAL WINDOWS because of the economy and absolute stability resulting from their use. Once installed in a school the window problem and worry is definitely over with . . . . Send for the new AUSTRAL Book of Schools.

101 PARK AVE AUSTRAL WINDOW CO. NEW YORK CITY